

**Striking a Balance:**  
**Navigating Tensions between Collective and Member Goals in Boundary Organizations**

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Collaboration across organizational boundaries becomes difficult when collective goals conflict with the individual goals of the involved parties. Boundary organizations, such as R&D consortia, coalitions, or stewardship councils, provide a structure for collaboration among diverse partners from different organizations, sectors, and disciplines (O'Mahony and Bechky 2008, Gulati et al. 2012, Fan and Zietsma 2017, Langley et al. 2019). Despite variations in nomenclature, this collaborative model is observable in various contexts, including partnerships between corporations and social movements (e.g., van Wijk et al. 2013, Timmermans and Leiter 2000), collaborations between universities and industry (e.g., Murray 2010, Perkmann and Schildt 2015, Perkmann 2017, Murray and O'Mahony 2007), or between other public and private partners (e.g., Logue and Grimes 2022), and collaborations among multiple firms for standard setting (e.g., Leiponen 2008, Simcoe 2014, Farrell and Simcoe 2012), field configuration (e.g., Cloutier and Couture 2023), or ecosystem alignment (e.g., Wareham et al. 2014, Dattée et al. 2018). How do such diverse members of boundary organizations stay together and pursue collective goals, despite their own goals that possibly diverge?

While boundary organizations are intended to facilitate collective effort (O'Mahony and Bechky 2008), their collaborative arrangements often fall short of initial ambitions (Grodal and O'Mahony 2017), suffer from exits (Gerges-Yammine and ter Wal 2023), or encounter disruptions due to escalating conflicts (Zuzul 2019). A pivotal factor contributing to the instability of boundary organizations is the inherent challenge of aligning diverse member goals (Perkmann and Schildt 2015). Prior work has extensively examined how design choices, structures, governance mechanisms, and organizing practices facilitate the pursuit of collective goals while preserving possibly diverging member goals (e.g., O'Mahony and Bechky 2008, Gulati et al. 2012, Perkmann and Schildt 2015, Jarvenpaa and Välikangas 2016, Couture et al. 2023). Yet, there is a gap in our understanding of how – within such designs – the *process* of goal pursuit unfolds over time and how this process is shaped by the actions and interactions of the boundary organization's members.

In the early stages of formation, roles, authority, and governance mechanisms may not yet exist and members within boundary organizations may lack the accepted authority to enforce goals (Jarvenpaa and Välikangas 2016). Even once structures or governance mechanisms are established, it is unlikely that they can continue to prevent conflict if collaborating parties aim to jointly address ill-structured

problems that lack clear definitions and solution paths (Simon 1973, Fernandes and Simon, 1999). In such instances, partners must continuously interact with each other, resulting in tensions between converging collective and diverging member goals that repeatedly resurface throughout the interaction process (Jarzabkowski et al. 2019, Langley et al. 2019, Cloutier and Couture 2023). These tensions have important implications for the evolution of boundary organizations. O'Mahony and Karp (2020), for example, show how a centrally orchestrated boundary organization could only attract external partners when it sacrificed some of its own interests and switched to a collectively determined development and governance process. However, beyond this notable exception, little is known about the dynamics of boundary organizations and the pursuit of collective versus member goals over time.

As tensions resurface, members are likely to react by trying to *shape* the goals pursued within the boundary organization to align with their own interests. However, the viability of the boundary organization is jeopardized if it is unable to strike a balance between the pursuit of collective and member goals, and if this equilibrium is disrupted, leaning excessively towards either direction, it may fail (Langley et al. 2019). If, on the one hand, members enforce their own goals too much, this may come at the cost of collective effort, possibly eroding the boundary organization's ability to address the problem it set out to tackle (Grodal and O'Mahony 2017, Couture et al. 2023). If, on the other hand, member goals are neglected to preserve collective interest, members may decide to leave (Gerges-Yamine and ter Wal 2023, Zuzul 2019). We therefore need to better understand the process of how and why members, in response to resurfacing tensions, shape the boundary organization's goals to align with their own goals while ensuring continued collaboration for the pursuit of collective goals.

For this purpose, we draw from the concept of "agency" (Emirbayer and Mische 1998) to examine the mechanisms via which members actively shape the boundary organization's goals as it evolves. To navigate tensions over time and maintain a balance between collective and member goals, members may need to continuously adjust their actions in response to ongoing dynamics. New actions can set the stage for novel challenges, necessitating further agentic interventions (Emirbayer and Mische 1998) and shaping the boundary organization's evolution. Examining the dynamics of how agency is exercised in boundary organizations is thus of fundamental importance, yet so far poorly understood. To

address this gap, we adopt a dynamic processual perspective and ask: *how does agency temporally evolve as members of boundary organizations navigate tensions between collective and member goals?*

To address this question, we study a boundary organization that provides a structure for incumbents, startups, and non-profit organizations in the energy sector to collaboratively transition to a zero-carbon energy future. It was formed without central authority and prevailed despite tensions between collective and member goals. We collected a rich longitudinal dataset, from the boundary organization's inception to the conclusion of its first annual program and tracked the different member groups as they responded to resurfacing tensions and shaped the boundary organization's goals.

We contribute to the literature on boundary organizations (e.g., O'Mahony and Bechky 2008, Perkmann and Schildt 2015, Langley et al. 2019) and collaborative organizing (e.g., Gulati et al. 2012, Fjeldstad et al. 2012, Snow et al. 2011, Zuzul 2019) by developing a process model that explains how and why agency evolves over time, as members navigate resurfacing tensions between collective and member goals. It outlines trajectories through which members achieve a balance between the two sets of goals, thereby enhancing our understanding of how boundary organizations can either sustain themselves or fail. These trajectories emphasize the importance of viewing goal pursuit as a dynamic process, where members continuously shift their focus between collective and member goals to maintain a balance over time. Our model explicates the agentic mechanisms by which this shift in focus occurs, illustrating a dynamic interplay between two forms of agency that differ in their temporal orientation and locus of agency. Regarding temporal orientations, we uncover how members alternate between future-oriented (projective) and present-oriented (practical-evaluative) agency. Regarding the locus of agency, we identify shifts between more concentrated and distributed loci, where authority may either centralize within a single member group or distribute more evenly across members. Our model suggests that members of boundary organizations must find a way of balancing these agency forms and proposes two means to achieve this balance: continuously oscillating between the two or adopting a hybrid approach. These insights deepen our understanding of how boundary organizations evolve. They add to prior research that has focused on governance structures (e.g., Gulati et al., 2012) and organizing practices (e.g. O'Mahony and Bechky, 2008) by detailing the processes through which members shift their agency to navigate resurfacing tensions.

## THEORETICAL BACKGROUND

Boundary organizations comprise a particular form of organized and bounded space that enables collaboration (Langley et al. 2019). They are widely prevalent and facilitate inter-organizational collaboration between heterogeneous parties with divergent interests (O'Mahony and Bechky 2008). Originally, Guston (1999) studied activities within the Office of Technology Transfer of the US National Institutes of Health, a boundary organization in which policymakers and scientists collaborate. Since then, the concept of boundary organizations has diffused to different contexts and types of organizations. Examples include multiparty collaborations between social movements and professional organizations (Timmermans and Leiter 2000) or universities and industry partners to accelerate drug development (Murray 2010, Murray and O'Mahony 2007, Perkmann and Schildt 2015); collaborative arrangements between open-source communities and for-profit software firms (O'Mahony and Ferraro 2007, O'Mahony and Bechky 2008); consortia of multiple organizations to create new standards (Simcoe 2014, Leiponen 2008), conduct research and development (Doz et al. 2000, Omidvar et al. 2017), or align for a joint value proposition (Wareham et al. 2014, Dattée et al. 2018)

Boundary organizations are increasing in importance, given the need to tackle ill-structured problems that require a collective effort from heterogeneous partners, often across organizations, sectors, and disciplines (Gulati et al. 2012, Grodal and O'Mahony 2017, Jarvenpaa and Välikangas 2016, Hilbolling et al. 2022). Ill-structured problems involve uncertainty as they lack clear definitions and solution paths (Simon 1973, Fernandes and Simon 1999), and evolve dynamically over time, requiring ongoing assessment, redefinition of what the problem is, and adaptation of solutions (Rindova and Courtney 2020). As a result of this uncertainty, actions are subject to different perspectives and are based on interpretations that vary across actors (Rindova and Courtney 2020). Thus, when diverse actors that come from different thought worlds (Dougherty and Dunn 1992) join forces to tackle ill-structured problems, goal diversity and differences in interpretations of how goals are to be achieved make it difficult, if not impossible, to achieve full goal clarity and convergence (O'Mahony and Bechky 2008, Dattée et al. 2018). As collaborating parties need to continuously interact in their aim to collectively interpret and tackle ill-structured problems, tensions are likely to resurface repeatedly throughout the boundary organization's evolution (Jarzabkowski et al. 2019). Therefore, boundary organizations must

continuously balance the need to preserve the freedom of individual members to pursue their own (possibly divergent) goals with the concurrent need to facilitate (converging) interests within the boundary organization (Langley et al. 2019). We cannot assume that – once set up – boundary organizations maintain an equilibrium between collective and member goals, as tensions resurface.

On the contrary, tensions are typically amplified in boundary organizations due to the dual embeddedness of its members. Members are embedded in both their home organizations and the boundary organization (Fan and Zietsma 2017). Even if a shared logic is created within the boundary organization that encourages collaborative behavior (Fan and Zietsma 2017, Ansari et al. 2013), members remain part of their home organizations that pursue their own goals. As a result, tensions arise at the boundaries that demarcate the different types of collaborating organizations (Langley et al. 2019), especially if members are not only assessed in terms of their collective efforts but also by their home organizations. The fact that partners face tensions when they collaborate across boundaries is well documented in the literature. They can be latent (Jarvenpaa and Välikangas 2016), resurface (Langley et al. 2019, Cloutier and Couture 2023), temporarily result in significant conflict (Logue and Grimes 2022), or even derail the collaborative effort (Zuzul 2019). Understanding how these tensions are dynamically addressed is thus of fundamental importance as it is critical for the boundary organization's survival and effectiveness.

Prior work has shed light on how tensions can be addressed via different structures or governance mechanisms that enable heterogeneous partners to collaborate. Studies by Perkmann (2017) and Perkmann and Schildt (2015), for example, show how an intermediating party within boundary organizations can provide a buffer between members with diverging interests via two mechanisms. First, by sequencing the decision-making process into a set of distinct issues, members of the boundary organization can address these issues separately. Second, by operating as an intermediary, third parties can broker dyadic interactions between its members. As a result, direct interactions between members are minimized and (resurfacing) tensions can be avoided. However, this approach is less viable when collaborative tasks are interdependent (Perkmann 2017) and uncertainty is high, necessitating direct member interaction (Jarzabkowski et al. 2019) and the exchange of interpretations of ill-structured

problems and their potential solutions (Simon 1973, Fernandes and Simon 1999, Fjeldstad et al. 2012, Rindova and Courtney 2020).

Related work on collaborative arrangements such as meta-organizations (Gulati et al. 2012; Valente and Oliver 2018) or ecosystems (Wareham et al. 2014, Dattée et al. 2018; O'Mahony and Karp 2020) provides an alternative solution to addressing tensions between diverse partners: central authority and orchestration. Meta-organizations involve a central architect that exerts some control over external partners (Gulati et al. 2012). Yet, in the early stages of the formation of the collaboration, it may be that architects do not yet exist, lack effective authority (Jarvenpaa and Välikangas 2016), or struggle to develop a unified vision capable of rallying the necessary actors (Dattée et al. 2018). In addition, over time, central authority can reduce collaborative breadth and intensity and may thus need to be sacrificed at certain points in the boundary organization's evolution to continuously attract and motivate partners (O'Mahony and Karp 2020). Yet, we know little about how boundary organizations transition across phases that differ in terms of who is calling the shots and how decisions are made.

Another set of studies takes a different starting point and describes boundary organizations that are formed without a central orchestrator. At the outset of the collaboration, authority is more distributed, and no singular group of actors has the accepted power to dictate goals and actions for others (O'Mahony and Bechky 2008, Fan and Zietsma 2017, Logue and Grimes 2022, Zuzul 2019, Zorina and Dutton 2021, Couture et al. 2023, Jarvenpaa and Välikangas 2016). In these settings, organizing practices have been identified as important enablers of collaboration between heterogeneous actors. Fjeldstad et al. (2012), for instance, propose how tensions can be addressed through trust-based protocols, processes, and infrastructures. Cloutier and Couture (2023) uncover a set of calibrating practices that modulate the relative intensity of tensions between members by either amplifying or diminishing them. Through different patterns of interactions, such as debating, engaging, or de-dramatizing, members calibrate tensions, whereby a medium degree of tension was found to be most conducive to achieving joint progress (Cloutier and Couture 2023). O'Mahony and Bechky (2008) examined how members of a boundary organization changed their organizing principles to facilitate collaboration. They show how the two member types – open-source communities and software development firms – adapted their organizing practices across four domains: governance, membership, ownership, and control over

production and thereby settled differences that could have prevented the collaboration. While this uncovers how members of a boundary organization *adapt* their organizing principles to enable collaboration, it sheds less systematic light on how members actively try to *shape* the goals and activities within the boundary organization when tensions resurface.

Tensions that arise from diverging goals typically trigger responses from involved actors (Smith et al. 2017). Under conditions of uncertainty and a lack of joint problem and solution definitions that may otherwise guide actions, members may feel the need and opportunity to shape the boundary organization's activities in the direction preferred by their own organizations (Rindova and Courtney 2020). Thus, even if governance mechanisms are put into place, members may steer the goals and direction of the boundary organization such that they align with the interests of their home organizations (Fan and Zietsma 2017). Yet, prior work has, so far, not focused on how members of boundary organizations actively shape activities over time so that, on the one hand, goals can be pursued, and on the other hand, cooperation does not fly apart, and the boundary organization can be maintained.

To understand how boundary organizations evolve despite persistent tensions we draw from the concept of "agency". Emirbayer and Mische's (1998) theory of agency accounts "for variability and change in actors' capacities for imaginative and critical intervention in the diverse contexts in which they act" (p. 970). They conceptualized agency as encompassing three dimensions that differ in terms of their temporal orientations: an iterational one which anchors action in the past through the replication of habitual routines; a projective one, which enables the envisioning of future courses of action; and a practical-evaluative one, which modifies action in the present, in response to currently evolving situations. Although all three dimensions coexist in any given action, Emirbayer and Mische (1998) note that in specific instances, one of these dimensions may be more prominent, influencing the direction and nature of the actions taken.

Previous research acknowledges the relevance of practical-evaluative agency for solving current problems within collaborative arrangements and of projective agency for taking collective action in anticipation of the future (Fan and Zietsma 2017). However, the mechanisms through which members utilize these agentic orientations to manage the ongoing tension between collective and member goals – and how these actions influence the trajectory of boundary organizations – remain underexplored.

Furthermore, temporal orientations are not given but can be influenced and reconciled through temporal work (Kaplan and Orlikowski 2013). This suggests that members' agency may involve not only deciding "what to do" within the boundary organization – specifically, which goals to pursue – but also shaping the temporal assumptions or patterns that influence goal pursuit. Shaping temporal experience, such as creating a sense of urgency in the present or establishing a shared vision for the future is an important agentic dimension that can impede or foster collective action (Bansal et al. 2022, Hilbolling et al. 2022, Jarvenpaa and Välikangas 2022).

Additionally, as members remain embedded in their own organizations, their agency may focus on aligning collective goal pursuit with the temporal structures of their home organizations (Hilbolling et al. 2022, Jarvenpaa and Välikangas 2022). Yet, we know little about how this dual embeddedness with different temporal demands influences the evolution of agency within boundary organizations. Given the resurfacing of tensions between collective and member goals, gaining deeper insights into how members of boundary organizations leverage and shape different temporal orientations to navigate these tensions and pursue both collective and member goals is crucial. How, why, and when do members of boundary organizations draw from and shape the past, present, and future to navigate tensions between collective and member goals? This study aims to shed light on this issue by exploring how agency evolves over time as members of boundary organizations navigate these tensions.

## **METHODS**

### **Case Context**

We conducted a single longitudinal case study with a continuous gathering of in-depth data to disentangle the process dynamics of agency within boundary organizations. The case is a newly formed boundary organization within the energy industry for which we use the pseudonym Open Energy. This is an appropriate and revealing setting for our study for several reasons. First, Open Energy was formed to tackle an ill-structured problem fraught with uncertainty: shaping the transition of the energy sector to a zero-carbon future. Tackling this problem requires a collaborative effort and entails different – sometimes conflicting – views regarding what the future of energy should look like (Jay 2013). Yet, this transition can be accelerated by collaborative efforts, for example between incumbents that control

critical infrastructure (e.g., the electricity grid) and new entrants – often startups – that provide innovative and clean energy solutions (Bumpus and Comello 2017).

Second, Open Energy provides a collaborative structure for three different member types: (1) incumbent electric utilities, (2) clean energy startups, and (3) non-profit program managing firms (PMs). Given their heterogeneity, members come with their own unique interests, elevating potential tensions between collective and member goals. They share a collective goal that no one group can achieve alone: transitioning to a zero-carbon energy future. Yet, they also pursue individual member goals. (1) Utilities – entities that engage primarily in the fossil-fuel-intensive generation, distribution, and sale of electricity within a defined geographic service territory – are traditionally regulated monopolies with limited or no experience in innovation. Yet, they are increasingly considering new technologies and business models to address the structural changes in their industry. These changes have been caused by a confluence of forces known as the “4Ds” – digitalization, decarbonization, deregulation, and decentralization – which have put pressure on the relatively shallow innovation capabilities of utilities. Considering these turbulences, utilities primarily want to survive the energy transition and continue to control infrastructure and customer access (Ossenbrink et al. 2019). The eight utilities hail from 7 countries, have a combined annual revenue of \$147 billion and more than 80 million customers in 40 countries and collectively manage approximately 2 million km of grid lines. (2) The startups in Open Energy – averaging 15 employees and ~\$1 million in revenue – each offer commercially available clean energy solutions (e.g., electric vehicle charging software, home solar energy systems, customer electricity demand reduction software). They come from multiple countries, are well-resourced, revenue-positive, and offer solutions that already have commercial traction. They want to disrupt the linear, fossil-fuel-based energy value chain and scale their clean energy solutions. (3) The PMs – as non-profit organizations – have the greater climate impact in mind. They facilitate collaboration between startups and corporations to advance clean energy entrepreneurship and deployment. They focus on supporting startups through a mix of pecuniary (i.e., funding) and non-pecuniary (e.g., coaching) means. Open Energy was formed to provide a structure that would allow these different entities to collaborate:

*Open Energy is a win-win proposition for energy startups and utilities. Utilities are facing significant disruption through the rise of renewables, decentralization of the energy system, regulatory uncertainty,*

*and technology. Energy startups are seeking funding opportunities and pilot projects with established partners to survive. Open Energy helps both parties meet in the middle. (Marketing material)*

Third, we could study the process from the inception of the boundary organization through the completion of its first annual program, thus gaining deep insights into its dynamics, while collecting data in real-time. We received unusually deep access facilitated by two member firms who championed the involvement of researchers. This allowed us to build an information-rich case in a detailed but realistic manner (Yin, 2018). In the following, we provide a detailed case description of Open Energy to better embed and contextualize our subsequent analytical procedures and findings.

### **Case History**

Conceptualization and early formation of Open Energy (consisting of utilities and PMs only) began in 2016, with the final formation (inclusion of startups through the selection process) occurring in March 2017. The seed of Open Energy's formation was a discussion between one utility and two PMs in early 2016. The utility had previously tried to engage with startups on its own but soon realized that it required a supportive structure to facilitate collaboration. Hence, the idea of a boundary organization, where it would be joined by other utilities and facilitating PMs, was born. With the support of the PMs, other utility members were found through personal networks and informal recruiting. The first version of a Memorandum of Understanding (MoU) – formalizing membership and stipulating a \$200,000 resource commitment per utility – was circulated in the second quarter of 2016.

In June 2016, five utility members (the remaining three were yet to be recruited) and two PMs convened for several days during a so-called “foundation meeting” to sketch the contours of Open Energy and design a program that would structure the interactions between utilities and startups. Shortly after the foundation meeting, members created a so-called “CEO pitch” – a document that communicated the agreed-upon purposes of the boundary organization to relevant decision-makers in the home organizations. The foundation meeting also revealed that Open Energy still lacked expertise in coordinating collaborations between incumbents and startups. This triggered the recruitment of a third PM: a non-profit accelerator organization with experience in designing interactions between startups and energy incumbents. After several further iterations, the MoU was signed in fall 2016. In the meantime, three more utilities had joined Open Energy. The startup “Call for Applications” was published and advertised in late 2016.

In January 2017, the first Open Energy program was officially announced during a joint launch event, hosted by one of the utilities. During January and February 2017, 453 startups from around the globe applied to participate in the program. In early March, each utility and PM coordinated with relevant internal stakeholders to evaluate and score the startups to create a top 30 list. Throughout that period, regular check-in and feedback calls were organized by the PMs to share insights and progress. Member scores were then weighted equally and used to cumulatively determine the collective top 30 startups. By the end of March 2017, all members assembled in person to interview the top 30 startups and select the final 12 through consensus-based decision-making. These 12 startups were asked to sign an agreement stipulating the terms and conditions of their participation in Open Energy. They did not have to give up equity (although investments could be negotiated bilaterally with any utility throughout the program), but they committed to attending all program parts. With the agreements signed, Open Energy was complete and ready to start its first annual program.

The program was outlined in terms of three, one-week in-person “modules” occurring in different geographic locations, with ongoing remote interactions taking place in between these modules. The first module took place in the spring of 2017 and included member-specific sessions, i.e., startups-only and utilities-only workshops, as well as joint sessions. The latter mainly took the form of so-called “marketplaces”, during which members could connect and identify opportunities for collaboration. In between the first and second modules, direct interactions between utilities and startups continued, either remotely or through mutual site visits. In addition, remote feedback and knowledge-sharing sessions took place among different member constellations (utilities only, utilities and PMs, startups and PMs). During the second module, the schedule was comprised mostly of joint sessions for utilities and startups to intensify their collaborative activities. This module finished with an event at which the startups pitched their business to the utility members and a group of invited external experts. Following “in-between” activities that focused on progressing pilot projects between utilities and startups, module 3 comprised joint sessions only and culminated in a showcasing event to which utility C-level executives were invited. Already during the third module, meetings had started taking place in different constellations – utilities only, utilities and PMs, all members – to plan future program editions of Open Energy. In December 2017, Open Energy was officially relaunched for a second annual edition.

## Data Collection

We gained access to and collected a rich set of primary and secondary data (see Table 1). First, we conducted 92 interviews that were transcribed into 1,509 pages of text. We interviewed 41 informants from 23 member firms, i.e., 3 PMs, 8 utilities, and 12 startups (from here on: PM1–PM3; UT1–UT8; SU1–SU12). For 13 of these firms, we conducted interviews with multiple (2–4) people (from here on P1–P4) to account for variance in perspective. We interviewed 22 of the 41 informants at multiple points in time (2–9 times). The remaining 19 informants were interviewed once. Most interviews (84) were formal in nature, i.e., pre-scheduled, following a semi-structured interview guideline, and 45–120 minutes in length. The interview guidelines followed our main theme of how agency evolved as members of Open Energy navigated tensions between collective vs. member goals over time and were continuously adapted as new topics emerged: guideline I was implemented before module 1 and covered topics about the formation of Open Energy, original member goals, shared interests, expected roles, and decision-making processes. Guideline II (post module 1) and guideline III (post module 2) focused on the dynamics of collective and member goals, tensions encountered, and collaborations that emerged within Open Energy. In addition to the topics covered in guidelines II and III, guideline IV also included a retrospective reflection on the initial design of Open Energy and its evolution, as well as an assessment of outcomes achieved so far.

We also conducted informal interviews, mostly during the modules in which both researchers were present. Eight of these interviews, 15–45 minutes in length, were recorded and transcribed. Additional informal interviews (including approximately 51 dedicated hours of discussion during coffee, lunch, dinner, and cocktail hours) were not recorded, but notes were taken within 24 hours of each discussion and compared among the authors. By collecting formal and informal interview data across all member firms, we can mitigate the single-firm blind spot (Lumineau and Oliveira 2018) and consider the perspectives of multiple actors, which enables a more pluralistic view. The interview data spans roughly 10 months, from Q1 2017 to Q4 2017, constituting the entirety of the first annual program. All participants were ensured anonymity.

Second, we collected observational data. The kickoff event and each of the three one-week modules of the program was observed in person by at least one of the authors, resulting in approximately

194 hours of observational data. After each day of the modules, field notes were compiled, discussed, and compared among the authors, and then validated the subsequent day via informant checking. In addition, during the times “in-between” modules, we participated in 38 video-conference meetings, resulting in an additional 35 hours of observations. These meetings included, among others, monthly member meetings, bi-weekly program meetings, coordination meetings, and so-called “intake meetings” that the PMs conducted early on with each member to assess their goals and expectations for the program. These meetings were either recorded and transcribed or extensive notes were taken.

Third, a vast range of documents were collected, sequenced, and analyzed. There are three kinds of documents: (1) 298 internal documents, which were generated by Open Energy, including slide decks, meeting notes, agendas, emails, logistics documentation, and feedback surveys; (2) 178 external documents, which are those widely available to the public, providing general information about each member and Open Energy itself; and (3) data from the digital communication platform, in the form of 380 pages of messages and uploaded documents. The document data spans a longer time frame than the interview data, ranging from the first meetings between utilities and PMs in January 2016 to feedback and progress-tracking documents in mid-2018. Given the richness and longitudinal nature of interview, observational, and document data, they were of roughly equal importance in our data analysis. They enabled us to systematically triangulate emerging insights into how members of Open Energy navigated collective vs. member goals through changes in agency.

INSERT TABLE 1 ABOUT HERE

### **Data Analysis**

To explore the evolution of agency in boundary organizations, we adopted a process study (Langley 1999, 2007, Langley et al. 2013; van de Ven and Poole 1995), proceeding in several iterative steps.

**Timeline.** First, we built upon our extensive case history to construct a timeline (Cloutier and Langley 2020). Guided by our research question, the timeline displayed in Figure 1 details “what” occurred (see text in boxes and on arrows), “when” it occurred (see the position of boxes on the x-axis which represents calendar time), and “who” was involved (see the different types of dashes around the boxes that indicate which member types were involved in the different events). Arrows connecting the boxes indicate relationships and that some time has passed between events; if there are no connecting

arrows between boxes, events occurred rather simultaneously. For this step, we relied mainly on the documents and observation notes as these were equipped with time stamps and included notes that were conducted in real time. Early in the analysis, it became evident that goals and activities within Open Energy shifted over time, highlighting the boundary organization's evolving focus.

INSERT FIGURE 1 ABOUT HERE

**Stages.** We then applied temporal bracketing (Langley 1999, Langley et al. 2013) to decompose the timeline into stages (see Figure 2). We first identified critical events (see upper section of Figure 2) that signified changes in Open Energy's evolution and may thus constitute demarcations between stages. First evidence of tensions could, for example, be detected in the multiple versions of the Memorandum of Understanding (MoU) which included changing roles scope for utilities and PMs and resulted in a final version in which PMs were service providers rather than equal partners. Critical events were also associated with shifts in Open Energy's focus. For example, while early events focused on addressing core industry challenges, the development of a "CEO pitch deck" demarcates a shift in focus, as Open Energy's key goal became to accelerate innovation that matches the utilities' challenges. Thus, a key insight from this step was that tensions resurfaced during critical events that shifted goal priorities.

As we suspected that shifting goals constituted responses to resurfacing tensions, we proceeded with a systematic analysis of how goals temporally evolved. Through descriptive coding (Miles et al. 2020, Saldaña 2016) of interviews and documents, we uncovered four main goals with varying salience over time. We constructed a growth gradient (see middle section of Figure 2) that graphically illustrates the frequency with which these goals were referred to in our data across different time periods (Miles et al. 2020). The colored lines show the relative importance of the four primary goals that we identified. This analysis revealed that goals coexisted, whereby specific goals would temporarily dominate, lay dormant, or rise again in importance. Combining the temporal goal analysis with our critical events, we identified four stages (see lower part of Figure 2): in Stage I, the industry transformation goal is salient; in Stage II, the corporate innovation goal is salient; in Stage III, the community goal is salient; in Stage IV, the community learning and deal flow goals are salient and of roughly equal importance. Two of these goals mainly served collective interests: industry transformation (in stage I) and community learning (in stage III), whereas the other two goals mainly served the interest of specific members:

corporate innovation (serving mainly utility interest in stage II), and deal flow (serving mainly utility interest in stage IV). The stages are separated by transitions, which represent periods during which critical events took place and goals shifted. What emerged from this analysis was that Open Energy shifted between focusing on collective versus member goals before settling on the dual pursuit of collective and member goals.

INSERT FIGURE 2 ABOUT HERE

**Transitions between Stages.** To uncover the processes driving the changing salience of goals, we focused on transitions between stages, examining how actions in one period led to contextual changes that affected actions in subsequent periods (Langley 1999, Cloutier and Langley 2020). We aimed to better understand how and why Open Energy transitioned across stages as tensions resurfaced and how agency has shaped the evolution. To this aim, we organized our data with respect to the identified stages and then focused our coding efforts on the transition periods in-between stages. In response to our research question and informed by our insights from the prior analytical steps, we conducted first-cycle coding (Miles et al. 2020, Saldaña 2016), focusing on (1) why goals shifted from one stage to the next (paying specific attention to tensions), (2) how these goals were shifted, and (3) who the main driving force in shifting the goals was. With this focus, the data was coded independently by the two authors, and codes were subsequently compared. Any discrepancies in coding were resolved through discussion (Campbell et al. 2013). We coded all data – interviews, documents, observation notes – and traced our steps in MAXQDA. When we coded the data, we relied extensively on In-Vivo codes and process codes to capture actions intertwined with the dynamics of time (Miles et al. 2020). We thus entered our analysis with the above-outlined theoretical focus; however, our insights emerged inductively from our first-cycle coding. We then conducted a second-cycle coding to search for patterns and grouped our codes into a smaller number of themes (Gibbs 2007, Langley 2007, Saldaña 2016). The appendix exemplifies our coding procedure for the transition from stage I to stage II and provides a table that lists all themes and selective empirical evidence *across stages*. The appendix also provides data tables that present empirical evidence for our first-cycle codes and second-cycle themes from different data sources.

**Visual Mapping.** To further develop and verify our emerging theoretical ideas, we utilized visual mapping as a tool to represent our themes and map their progression over time (Langley, 1999). The

map (see Figure 3) provides a summary of what took place in the case and helps demonstrate the connection between our qualitative database and the descriptions in our findings. Following Langley (1999), the visual mapping helped us “descriptively representing our process data in a systematic and organized form” (p. 707) but it is not yet “a theory but an intermediate step between the raw data and a more abstract conceptualization” (p.702).

INSERT FIGURE 3 ABOUT HERE

**Process Model.** To move toward more theoretical explanations, we proceeded to developing more abstract coding (Langley 1999). By iterating between theory and data, we collapsed our themes into aggregate dimensions (Gioia et al. 2013). Figure 4 displays our data structure, visualizing our first-cycle codes, themes, and aggregate dimensions. Then, using these aggregate dimensions, we abstracted our analysis further to construct our final process model (see Figure 5). To construct the process model, we further analyzed the sequences in our visual map (see Figure 3) to trace for overall temporal patterns that would be informative for more abstract theorizing (Langley 1999) and iterated with prior theory on the evolution of boundary organizations. The result of this last step is a process model that explains how agency in boundary organizations evolves over time as members navigate tensions between collective and member goals.

INSERT FIGURES 4 AND 5 ABOUT HERE

## FINDINGS

In the following, we present our findings according to the four stages, each marked by transitional periods where tensions resurfaced, and goals shifted. In this section, we detail the critical events and emerging patterns throughout the formation and development of Open Energy, supported by representative data. Our analysis identifies four significant changes in how members navigated resurfacing tensions between collective versus member goals. They were triggered by key events that brought either collective or member goals to the fore. We further uncover four agentic mechanisms through which members exerted their influence to address these tensions that co-occurred with shifts in the locus of agency – that is, shifts in where the capacity to act, make decisions, and exert influence predominantly resided. Figure 3 portrays the visual map that we refer to in order to structure our results.

### Formation of Open Energy Despite Inherent Tensions (Stage I)

The concept of Open Energy first emerged during informal discussions between one utility and two PMs. To concretize their discussions, they developed a concept pitch – a document that was used to recruit additional utility members (see critical event in Figure 2). During the development of the concept, it became apparent that utilities and PMs joined the collaboration with distinct interests. Utilities faced corporate pressures and institutional constraints shaped by their respective market and regulatory environments. Their primary aim, driven by the necessity to navigate the energy transition, was to gain market and technological foresight. As one utility participant expressed: *“Looking at all the startups and taking a snapshot of the planet, will give us insights into emerging trends and business models.”* (UT4, P3) Conversely, the PMs were motivated by the opportunity to promote *“climate impact.”* (PM1, P2) While the startups were not yet selected, initial inquiries with applicants revealed the interest to pursue commercial scalability: *“That is what we were hoping: how can we scale our business.”* (SU4, P1) Hence, the groundwork for inherent tensions between goals was set from the start. For instance, scaling startups that eventually disrupt the traditional energy industry could directly challenge, rather than support, the utilities’ businesses.

***Navigation of Tensions: Delaying through Co-Creation.*** Despite these tensions, Open Energy’s early development was marked by a shared belief that diverse interests could coexist and mutually benefit all members. Accelerating clean energy startups was seen as a way to facilitate their growth and aid the industry’s decarbonization. Simultaneously, utilities expected to benefit from interacting with these startups. One PM articulated the initial optimism regarding the co-existence of these interests:

*“Two conversations: one is, how do we create an attractive program for the startups, so we attract the most disruptive, innovative ones. And then the other one is, how we own the value proposition for the utilities. I think those conversations [...] there was no conflict between them. We just kind of talked about it at a high level.”* (PM2, P2)

To accommodate these concurrent agendas, utilities, and PMs agreed to co-create the program through a continuous, iterative process. They recognized Open Energy as an innovative experiment without a predefined template. This spirit of co-creation was voiced by a PM:

*“The first meeting I think was one of the strongest pieces of [Open Energy], which was just a white space meeting to talk about what it was going to look like. It was very high-energy, high-level. Are we going to all agree to come together and do this and go on this journey together?”* (PM1, P2)

Through co-creation, utilities and PMs managed to defer making critical decisions regarding specific objectives, thus keeping inherent tensions at bay. The prevailing attitude was one of pragmatism

and collective problem-solving as the program evolves: “*We’ll figure that out when we get there. In the meantime, we’ve agreed we’re doing it, so just get on with it.*” (UT4, P3) Initially, Open Energy was conceptualized with a flexible framework, described metaphorically as “*a very flaky wireframe*” (UT4, P3) which facilitated member recruitment and collaborative engagement, as it suggested that member goals could be considered in future decision-making. Hence, although tensions between collective and member goals were present from the start of Open Energy, the commitment to a co-creation process allowed members to delay these tensions from escalating.

**Agentic Mechanism: Envisioning.** The delay of tensions via co-creation set the stage for a collaborative environment where utilities and PMs could collectively imagine and plan future possibilities. This mechanism, which we label ‘envisioning’, allowed both member groups to exercise their agency by crafting a vision of Open Energy’s future impact and achievements:

*“If you look at the arc of the story over the next five or ten years [...] the biggest trends in the industry are going to be seeded through the projects that are running through [Open Energy].”* (PM1, P2)

*“There is a significant transition happening due to the digitization of the industry and the shift in the whole mix for [electricity] generation. We want to leverage a global innovation ecosystem to understand what is coming in, and take care of business, and work with partners to implement some of the new way of things.”* (UT1, P1)

As a result of this envisioning, ‘industry transformation’ emerged as a salient goal (see Figure 2). The goal involves steering the energy sector’s trajectory to adapt to and thrive amidst the structural shifts brought about by digitalization, decarbonization, deregulation, and decentralization. The primary lever for achieving this transformation was to accelerate clean energy startups, with the belief that such efforts would benefit the collective interest. Accelerating the adoption of new technologies, business models, and standards was seen as essential for all stakeholders to advance more rapidly towards a zero-carbon energy future. “*We definitely see startups as being a huge part of the future of the energy industry. So, we need to figure out what they are up to, what we can learn from them, see where we can partner with them.*” (UT4, P2) Thus, during the early stage of Open Energy’s development, both utility and PM members focused on the collective goal of driving the energy industry’s transformation, embodying the sentiment: “*We can change the energy industry within this room*” (UT1, P1).

**Locus of Agency: Equalized Agency.** The shift towards envisioning was paired with a democratic approach to decision-making, ensuring that agency – the power to shape Open Energy’s

goals – was distributed equally among members. The foundation stage of Open Energy was characterized by an equitable environment, where PMs and utilities entered as “*equal partners*” (PM2, P1), and all utilities were granted “*balanced roles in the governance of Open Energy*” (Concept pitch by UT3). Accordingly, an early version of the MoU specified that each member – including the PMs – contributes with equal authority and that decision-making would be consensus-based (see critical event in Figure 2). We depict this concept of equalized agency in Figure 6(a), where utilities (represented by small circles) and PMs (represented by squares) are shown to have equal influence and rights in directing Open Energy’s goals, unified by a collective envisioning process which is symbolized by the encompassing thick circle. Within this notion of equalized agency, utilities relinquished control, embracing a cooperative approach to defining the goals and activities of Open Energy:

*“The upside of hanging together beats the downside of not being completely in control. That’s the tradeoff for me; people have to let go of being the ones in charge. And it’s quite difficult because most of the time big utilities are used to being in the driving chair commercially because they tend to dominate the particular geographic patch they’re in.” (UT6, P1)*

Figure 3 depicts these dynamics taking place in the early formation stage. While Open Energy, from its very inception, faced tensions between collective and member goals, members navigated tensions through a co-creation process. This enabled the envisioning of future collective goals, executed by equalized agency. The agentic mechanism (envisioning) and the locus of agency (equalized agency) were mutually constitutive in pursuing the collective goal of industry transformation. Envisioning required equalized agency, so that all members would feel empowered to contribute their future visions. Conversely, the act of envisioning fostered an environment in which agency remained equally distributed among members. Yet, as already implied in the quote above, achieving equalized agency was particularly challenging for utilities, necessitating deliberate effort. The initial consensus to embark on co-creation merely postponed, rather than resolved tensions between collective and member goals. As Open Energy evolved, sustaining equalized agency became increasingly challenging. New dynamics emerged, altering the way tensions between collective and member goals were navigated.

INSERT FIGURE 6 ABOUT HERE

### **Transitioning to Stage II: Navigating Tensions by Shifting the Focus to Member Goals**

The foundation meeting (see Figure 2) marked a critical event, intensifying tensions between the previously established collective goal (i.e., transforming the industry) and the goals of utility members.

This meeting aimed to forge a “CEO Pitch Deck”, a strategic tool designed for utilities to garner executive approval and resources necessary for Open Energy. The criticality of this tool was underscored by the foundation’s meeting notes which prioritized the joint development of “*a slide deck that everyone can take back to their CEOs*” and that specifies “*what do we [the utilities] get from this?*” The requirement to concretely define goals brought underlying tensions to the forefront, particularly as discussions about the program’s design unfolded. For example, a contentious debate emerged over whether external investors should be allowed to participate in Open Energy events, highlighting the divergent perspectives between utilities and PMs. While PMs advocated for an inclusive approach to accelerate startup growth and thereby contribute to industry transformation, utilities expressed concerns about potential conflicts with their corporate objectives. A utility representative voiced apprehension about the implications of exposing startups to third-party investors:

*“I’m not against it. I just want to understand how does it work? Because if I go back to my board and say: oh, the start-ups are getting exposed to all the third-party investors [...] and suddenly one of the third parties runs off with one of the start-ups—but I funded the program? I see that tension.” (UT1, P1)*

**Navigation of Tensions: Imposing member goals.** At this point of Open Energy’s evolution, the utilities increasingly imposed their own goals. The necessity to align Open Energy’s activities with their corporate strategies became increasingly apparent, driven by the need to secure corporate buy-in and resource support. “*You have to realize that you are trying to get buy-in from other [internal] departments that have their own mandate.*” (UT2, P1) This alignment effort was seen as essential not only for obtaining executive backing and funding but also for persuading colleagues in the business units to allocate time and resources to engage with the startups in the program. Therefore, utilities increasingly imposed their own goals and tailored activities in Open Energy to complement their corporate strategies.

As a result, corporate innovation emerged as the most important goal after the foundation meeting (see Figure 2), reflecting utilities’ ambition to integrate and commercialize novel solutions to maintain their competitive edge in a rapidly evolving industry. The shift towards emphasizing member goals was further evidenced by the CEO pitch deck, which, while still acknowledging the collective industry transformation goal – “*joining an industry vanguard focused on advancing the clean energy transition*” – highlighted utility-specific objectives, such as “*sourcing external innovation in a cost-*

*effective way*”. Hence, this point in Open Energy’s development was marked by a significant shift in focus from collective to member goals.

***Agentic Mechanism: Resource Leveraging.*** As Open Energy progressed, the imposition of member goals catalyzed a shift towards a more unilateral form of agency, with utilities leveraging their resources to shape Open Energy’s direction. One important lever for claiming more agency was for the utility managers to ensure that modules would be hosted at their headquarters, rather than in regional entrepreneurial ecosystems. This move not only granted utility members greater legitimacy in steering the program but also facilitated tighter integration between Open Energy’s activities and the utilities’ businesses. One of the PMs highlighted the shift that this hosting decision caused within Open Energy:

*“The reason why it ended up [in the three locations] is that utilities wanted to host. That was a point of tension in the project because that’s not really what we had discussed until that point.” (PM3, P1)*

Another strategy employed by utilities to mobilize resources was to recruit more employees from their business units to participate in the startup selection process, thereby ensuring the inclusion of key resource providers. Despite an initial agreement limiting participation in the modules, utilities aimed to maximize exposure for their employees: *“For [module 1], we would talk about limiting the number [of people] who can attend. [But] we will work around that. We will try and get as many people exposed as possible.” (UT1, P1)*. This was complemented by the provision of more resources to Open Energy, reinforcing the utilities’ influence over the program’s direction: *“They all wanted to provide more resources to the program. They are utilities; they have tons of resources.” (PM3, P1)*

The transition to a “pay-to-play” dynamic, where resource contributions translated into greater decision-making power, underscored the shift in agency: *“They think because they put the cash in that they can control everything, even when [...] we developed it all together.” (PM3, P1)* This increase in authority manifested in various decisions that were made in this phase of Open Energy’s development. For instance, utilities decided to prioritize mature startups, aligning more closely with utilities’ immediate business needs over the acceleration of early-stage startups with greater potential for climate impact. Utilities’ influence also manifested in last-minute adjustments of the program to align with their objectives: *“I also felt that sometimes the utility partners—I guess especially us; we hijacked the program [...] we introduced some sessions that were not on the official program.” (UT5, P2)*

***Locus of Agency: Unilateral Agency.*** As utilities assumed greater control, PMs found themselves increasingly marginalized, marking a shift from equalized to unilateral agency. Through the modified startup selection process, startups entered Open Energy with the understanding that utilities were in charge. This change in agency is illustrated in Figure 6(b), showing utilities at the center of Open Energy's operations, with PMs and startups positioned at the periphery. A core group of utilities – those that had been designated as hosts of the program's module had emerged as orchestrators of Open Energy. This change in the locus of agency is well documented in the different versions of the MoU. While initially, utilities and PMs were listed as “*partners*” who jointly decide about changes in the program, in later versions, PMs were listed as “*program co-directors*” and their “*appointment, removal, and change of responsibilities*” could be voted on by the utilities (see critical event in Figure 2). As the focus shifted to utility members' goals and thereby de-emphasized collective interests, the boundaries of Open Energy – representing the extent of collective vision and action – became less pronounced, as indicated by the thinner encompassing circle in Figure 6(b).

In conclusion, the shift in focus from the collective goal of industry transformation to corporate innovation, driven by the utilities who were imposing their own goals, led to a fundamental change in Open Energy's dynamics (see Figure 3). Utilities' resource leveraging and the emergence of unilateral agency, where a specific member group shaped Open Energy's goals and activities, mutually reinforced each other, resulting in a shift away from the initial equalized agency and envisioning. This shift facilitated Open Energy's move from planning to execution, as it enabled the acquisition of resources from member organizations, but it also laid the groundwork for recurring tensions.

### **Transitioning to Stage III: Navigating Tensions by Shifting the Focus to Collective Goals**

The unilateral agency model was disrupted when all members gathered for the first module of the annual program which comprised a week of combined business and social activities (see critical event in Figure 2). This one-week-long gathering facilitated an unexpected level of social bonding, which in turn challenged the prevailing focus on corporate innovation by fostering a sense of community that reoriented Open Energy towards collective goals. While the social bonding was appreciated across the board, members – particularly the utilities – were also perceptive of the tensions that this new focus brought to the fore: “*So it became a love fest. It wasn't meant to be a love fest.*” (UT7, P1).

**Navigation of Tensions: Cultivating a community.** The social bonding and resulting sense of community first emerged among the startups. While cohort bonding was a deliberate design feature introduced by the PMs, the depth of relationships that ensued surpassed expectations: *“As for the cohort of startups, it was simply fantastic and almost a relief, reassuring and tremendously motivating to meet like-minded people. [...] Open Energy was like a whistle calling us all into a swarm heading in the same direction.”* (Slack message SU8) This unexpected sense of community caught the attention of the utilities: *“What I definitely saw, which I hadn’t anticipated was the degree to which those companies seem to bond with each other pretty well.”* (UT6, P1), motivating them to also bond with each other, become fully transparent, and mutually share insights from their startup interactions. The sense of unity thus trickled across all member groups and cultivated a robust sense of community:

*“This started in the first module, the sense of community and camaraderie is pretty strong.”* (PM2, P1)  
*“I guess the community spirit that has been developed was better than expected.”* (UT3, P1)  
*“But it’s funny that I was expecting execution. I have got a community.”* (SU6, P1)

As this community spirit took hold, the corporate innovation goal dropped in relative importance and the goal of community learning became salient (see Figure 2). This shift underscored Open Energy’s evolution from a focus on strategic execution by a single member group to a broader emphasis on relationship building and knowledge exchange for future collective benefits. While for the startups, relationships were of essence from the moment that they joined the program, the utilities underwent a significant shift. As social bonding intensified, they increasingly relied on relationships in their decision-making rather than merely on strategic considerations, as illustrated here:

*“Once we got through all that [power struggle], people really got a sense that we’re doing something pretty amazing. And you already started to build some trust, and you could really talk to people, and they’ll tell you the truth [...] We’ve realized the importance of people as a paramount [...] getting to know them, the relationships, spending time together. Doing that is so important because it gives you such a more vested interest in trying to make something work.”* (UT6, P1)

**Agentic Mechanism: Relational Influencing.** In response to this evolving context, members used their personal relationships to inspire and guide one another towards collective goals. Agency was thus exercised in two ways which, collectively, we label as relational influencing. First, peer-to-peer learning became a pivotal activity within Open Energy, with members actively exchanging knowledge. Through learning from others, members became aware of new opportunities, as illustrated here: *It was like: Oh, I didn’t realize you were doing this, or you had a pilot here; let’s talk. And then they would*

have those offline conversations, or their calls in-between due diligence. Setting up containers for them to find out things about each other, you know, peer-to-peer learning in and of itself (PM1, P3). Peer-to-peer learning as a key driver of activities conducted within Open Energy emerged unexpectedly, had not been designed for, and arose from the strengthened community.

Second, beyond exchanging knowledge, members actively supported one another and thereby shaped each other's activities. For instance, startups supported each other with customer acquisition: *"We [two startups] literally decided to spend the following week to see if we could build up enough trust between ourselves to actually open up the kimono and say, okay, I'm going to invite you over to meet my customers, and you can do vice-versa."* (SU3, P1) This relational influencing extended to interactions between member groups. For instance, utility members felt a personal responsibility towards ensuring future success of all startups, irrespective of whether their offerings directly aligned with their strategic objectives: *"There are the ones [...] not part of our business [but] we would love to work with those companies [...] because they are really good people."* (UT6, P1) Vice versa, startups felt committed to helping the utilities survive and thrive amidst the energy transition: *"This is what we are really doing here. We are helping the utilities find new business models themselves so that they can change."* (SU6, P1) Thus, members' capacity to act and make choices was significantly shaped by the social and relational contexts they were part of, and their collective efforts focused on the future success of all members – scaling startups and helping utilities transform.

**Locus of Agency: Decentralized Agency.** This stage was characterized by a more decentralized agency locus, with decision-making emerging from the dynamic interactions within and across member groups. This shift was exemplified by the increased preference for unstructured, self-organized interactions over formalized activities. In module 2 (see critical event in Figure 2), for instance, up-front scheduling became increasingly replaced by ad-hoc and self-organized interactions. We systematically compared the program elements in modules 1 and 2 and found that in module 2 the proportion of structured knowledge-sharing sessions decreased from 50% to 33%. And while the proportion of unstructured information-sharing sessions remained rather stable (roughly 20%), the amount of social time increased from 28% to 47%. The following quote illustrates how self-organization fostered an environment where collaboration could flourish:

*“It’s an interesting thing, but you have this structured part of the program, and then you have the unstructured part. [...] And we came across a couple of different things that we managed to put together over beer, as opposed to sitting in a room at a table where you’re in that structured environment. So, I personally think that is almost as important as the structured part of the day.” (UT4, P1)*

This change in agency, depicted in Figure 6(c), signifies a shift from a unilateral model to one where decisions were made within smaller, collaborative projects. These projects were formed within member groups (e.g. startup-startup), across member groups (i.e. utility-startups), in pairs, and multi-party configurations (see critical event in Figure 2). Many of the collaborations emerged unexpectedly, grounded in the personal relationships established during the program, such as previously deemed uninteresting utility-startup pairings: *“Actually, companies that we believed were not interesting, we ended up concluding they are interesting.” (UT3, P1)*, or multi-party collaborations that capitalized on peer-to-peer learning: *“Why don’t we, for some of the startups where more utilities are interested, just do a consortium deal?” (UT5, P1)* As the locus of agency became embedded in the direct relationships amongst and between utilities and startups, the PMs’ role in shaping goals and activities within Open Energy remained less relevant, keeping them at the periphery of Open Energy (see Figure 6(c)). As some collaborative projects extended beyond the boundaries of Open Energy: *“They are jointly exploring business opportunities; up to the point where these joint activities outside of Open Energy become more important than opportunities inside Open Energy” (Observation notes, module 2)*, the boundaries of Open Energy became more porous (see dashed encompassing circle in Figure 6(c)).

In sum, as Open Energy transitioned to stage III (see Figure 3), the sense of community led members to increasingly prioritize collective goals. The deepening of relationships enabled members to guide and inspire each other within the collective social framework of Open Energy. Relational influencing predominantly took place within the scope of smaller collaborative projects, illustrating a shift from unilateral to decentralized agency. This became the prevailing approach throughout most of the execution phase, spanning from module 1 to module 3. However, as the conclusion of Open Energy’s inaugural annual program drew near, tensions between member and collective goals resurfaced yet again, prompted by an emerging urgency to achieve tangible results.

#### **Transitioning to Stage IV: Navigating Tensions by Balancing Collective and Member Goals**

For the final module, Open Energy organized a showcase event for key stakeholders, including the utilities’ C-level executives, to highlight the collaborative achievements to date. This critical event also

coincided with the decision about the potential launch of another annual program with a new set of startups (see critical events in Figure 2). With these pivotal events on the horizon, tensions resurfaced. Utilities sought immediate achievements in light of the showcase, while the continuation of Open Energy hinged on its commitment to broader, collective objectives. Tensions between these two are summarized by a startup representative, reflecting on the focus on short-term achievements with a hint of irony: *I think the biggest disappointment in [module 3] was the deal mentality [...] What's a deal? We did a deal with [Utility 1]; we got the \$2 note sitting on my desk as our Open Energy success, right?* (SU10, P2)

**Navigation of Tensions: Pushing for immediate member results while preserving the community.** At this point, members navigated tensions by pushing for immediate member results while sustaining the community spirit that would enable the continuous pursuit of collective goals. On one side, the corporate environment pressured utility members to produce short-term results: *"They want to know the six value-creating things I'm going to get from this exercise."* (UT6, P1) This urgency led utilities to pressure each other and to put pressure on startups to "close deals", as these were seen as tangible proof of success. A startup CEO explained: *"We're heading to the third module, and it would seem the definition of success is to have a pilot agreement with a utility."* (SU3, P1), a sentiment echoed by a utility manager: *"It got to the stage where people were just trying to get deals done."* (UT1, P1) Deals were short-term transactions of startups' products with a clear focus on monetary and product exchange. While startups would capture some value from the sale of their products, this was primarily a utility-level goal. Utilities were seeking to close small deals to deliver concrete, near-term results to their home organizations, while startups were hoping for larger and longer-term commercial agreements.

Conversely, there was a collective realization that the first program only laid the groundwork for future collaboration: *"This is going to happen again and again, and this is something that is supposed to really make an impact globally."* (UT1, P1) Efforts to plan subsequent editions and ensure ongoing support for the initial cohort of startups were intensified: *"Let's not forget that this is only the start because we will keep on supporting the companies we said we would support."* (Utilities Slack channel) The sense of community fostered in the program was seen as a critical foundation for Open Energy's long-term vision, encouraging discussions on future directions and collective goals: *"People are more interested in talking about how [Open Energy] can evolve in the future. How can we leverage the*

*community for everybody's goals?" (PM3, P1)* Thus, Open Energy now mainly pursued two goals of roughly equal importance (see Figure 2): achieving short-term deal flow and sustaining the community learning goal. Tensions between these two were navigated by bridging the two goals over time. That is, members framed short-term deals as building blocks or "*seeds*" for long-term community value: "*There's an assumption that all these interactions are useful; some of them might actually come to fruition years later.*" (PM2, P1)

**Agentic Mechanism: Peer pressuring and envisioning.** In the pursuit of short-term goals, members utilized what we refer to as 'peer pressuring'. They created a sense of urgency to "*to act more quickly and utilize peer pressure to get deals done.*" (PM1, P1) This approach was motivated by the desire to present tangible outcomes at the showcase event, especially to the utilities' broader audience: "*And this show-and-tell pitch session allows you – gives you a platform to reach a wider audience in the utility.*" (UT1, P1) The underlying fear of not meeting expectations spurred action: "*No one wants to go there and be embarrassed that they haven't done anything. So, there's a natural: shit, we've got to get our act together.*" (SU3, P1)

Simultaneously, as the program's end approached, members realized that the initial goal of industry transformation was not yet sufficiently achieved, recognizing the need for more time to achieve significant collective impact. As such, members returned to envisioning future achievements of Open Energy. Rather than abandoning the initial vision, members believed that the relationships contained within Open Energy would serve as a springboard for future impact: "*Hey, we are serious about it. And we are able to get partners and collect meaningful change for the industry.*" (UT7, P1) Members were committed to continuing the collaborations that had formed within Open Energy and exploring collective goals on "*the runway beyond the pilot*" (Observation notes).

**Locus of Agency: Multilateral Agency.** While agency remained decentralized within collaborative projects, there was an increased effort to coordinate these endeavors, moving towards a multilateral form of agency. This shift, depicted in Figure 6(d), was characterized by enhanced coordination and alignment across projects, as members recognized the potential for mutual support: "*I think that we haven't utilized enough in the way that we can assist each other. But I think that we are going to do a lot more.*" (UT1, P1) We describe this form of agency as multilateral because members –

especially the utilities – pressured each other in their actions. As opposed to equalized agency which characterized Open Energy in the early formation stage, multilateral agency does not imply that all parties have equal influence. While PMs became more involved again as they helped coordinate across projects and facilitated the completion of deals, they were still considered service providers. The PMs were replaced in the second edition of Open Energy by a new organization that was hired to manage the logistics. The multilateral coordination and the dual focus on peer-pressuring for short-term results and long-term envisioning strengthened Open Energy’s boundaries – as indicated by the thicker surrounding circle in Figure 6(d) – thus, preparing the boundary organization for future cycles of collaboration.

To conclude, as collaborative efforts matured, home organizations expected tangible results, validating the continued involvement in Open Energy. However, striving for short-term benefits conflicted with Open Energy’s long-term ambitions, reinforcing tensions between (immediate) member goals and collective goals. To navigate these tensions, members pursued two agentic mechanisms simultaneously: (1) envisioning to reaffirm the commitment to the community and its long-term impact, and (2) peer pressuring to achieve member goals, at least in the short term. While agency remained decentralized in the collaborative projects, peer pressuring and envisioning reinforced coordination across projects, establishing a multilateral locus of agency. The dual agentic mechanisms of envisioning long-term collective goals and peer pressuring for short-term member goals established a balance within the boundary organization, moving the process to the center of the framework (see Figure 3).

While outside the scope of our empirical analysis, different options for Open Energy’s evolution beyond this point seem possible. First, it might remain in a state of multilateral agency in which it pursues member goals in the short-term and collective goals on a long-term horizon. Second, key events may once again bring either collective or member goals to the fore, igniting further cycles of shifting agency. Third, if tensions continue to resurface, the boundary organization remains at risk of collaborative failure, either by neglecting member goals or by over-emphasizing them, which can cause tensions to escalate. We explore these possibilities further in the discussion section.

## **DISCUSSION: THE EVOLUTION OF AGENCY IN BOUNDARY ORGANIZATIONS**

The visual map in Figure 3 forms the foundation for developing a more abstract process model, which we created by iterating our findings with existing theory (Miles et al., 2020). This involved abstracting

our findings to a more theoretical level, allowing us to demonstrate how the results engage with, extend, or challenge existing theory. For this purpose, we first discuss the aggregate dimensions (see data structure in Figure 4) and how they relate to prior theory, before explicating the process model that puts these dimensions into relationships.

### **Navigating tensions through temporal focus on collective versus member goals**

While the establishment of a collective goal is crucial for the formation of boundary organizations (Gulati et al. 2012), the dual embeddedness of members (Fan and Zietsma 2017) implies that they still need to pursue their own, possibly divergent goals. This duality presents a conundrum as tensions arise when collective and member goals are not balanced (Langley et al. 2019). Focusing excessively on member goals can hinder initial collaboration (O'Mahony and Bechky 2008) and escalate tensions (Jarzabkowski et al. 2019, Zuzul 2019), whereas an overarching emphasis on collective goals may lead to member disengagement (Gerges-Yammine and ter Wal 2023) or goals falling short (Grodal and O'Mahony 2017). Our findings confirm the inherent tensions between collective and member goals within boundary organizations. Adding to prior work, our process perspective reveals that members of boundary organizations actively *navigate these tensions by temporarily changing their goal focus*, alternating between emphasizing collective and member goals. As shown in Figure 3, temporal foci can take various forms, including a clear focus on either collective or member goals, as well as attempts to delay tensions or combine short-term member with long-term collective goals. What is theoretically important is that our analysis showed how members navigate tensions by temporarily changing focus between collective and member goals and that this ignites a shift in agency (see Figure 5).

### **Agentic Mechanisms: Projective and Practical-Evaluative Agency**

Our analysis uncovered a set of agentic mechanisms through which members navigated tensions, shifted goals, and thereby influenced the evolution of the boundary organization. These mechanisms – envisioning, resource leveraging, relational influencing, and peer pressuring – enabled members of Open Energy to alternately prioritize collective or member goals. Iterating with theory, we propose that these mechanisms differ in their reliance on projective versus practical-evaluative agency (Emirbayer and Mische 1998). Envisioning and relational influencing emphasize projective agency, where collective actions are guided by future possibilities. When members engage in envisioning, their actions are driven

by visions of potential outcomes. This parallels what Grodal and O'Mahony (2017) term "goal grafting", which involves layering a shared "grand" goal – to be achieved in the future – atop existing interests. Similarly, through relational influencing, members' actions are guided by anticipated benefits from peer learning, providing direction for future opportunities. Both envisioning and relational influencing involve "emotional engagement" (Emirbayer and Mische 1998, p. 986) as members invest effort because they care about the future of the boundary organization (Fan and Zietsma 2017). We thus aggregate them to the dimension of *projective agency*, through which members move "beyond themselves" and construct pathways from the present into the future (Emirbayer and Mische 1998, p.984).

In contrast, resource leveraging and peer-pressuring are rooted in practical-evaluative agency, which focuses on the present and involves adapting actions to respond to evolving circumstances (Emirbayer and Mische 1998). For example, resource leveraging involves power dynamics (Gray et al. 2022) that address the immediate demands and contingencies imposed by home organizations (Fan and Zietsma 2017, Jarvenpaa and Välikangas 2022). During the transition to Stage III in Figure 3, peer pressuring relied on practical-evaluative agency, focusing on members' goals by facilitating "deals" that could be executed in the short term to serve home organizational interests. To illustrate the different temporal orientations, we compare 'relational influencing' and 'peer pressuring'. While both use social influence, peer pressuring creates urgency to achieve immediate outcomes (e.g., "deals"), whereas relational influencing serves as a source of inspiration and guidance, used to project into the future and imagine long-term benefits from peer-to-peer learning. Hence, the agentic mechanisms entail temporal work (e.g., Bansal et al. 2022), where members actively shape the temporal perceptions of activities within the boundary organization. They either emphasize the urgency and short-term nature of actions (e.g., leveraging resources to meet immediate demands from home organizations or creating urgency through peer pressuring for short-term deals) or highlight the long-term nature of activities (e.g., envisioning future impact or investing in long-term relational benefits).

### **The Locus of Agency**

Our findings further revealed different loci of agency, that is, differences in where decision-making within the boundary organization resided (see Figure 6(a)-(d)). Both equalized and decentralized agency – which we collapse into "*distributed agency*" – emphasize more democratic, horizontal structures,

where decision-making is spread across actors rather than being concentrated in a single member group (Jarvenpaa and Välikangas 2016, Zorina and Dutton 2012). With equalized agency, decision-making is distributed, given the concerted effort to ensure that everyone has an equal say in shaping the boundary organization's goals. With decentralized agency, decision-making power is also distributed, but arises from the dynamic, self-organizing interactions among different members, similar to what prior work has described as actor-oriented collaborative designs (Fjeldstad et al. 2012, Snow et al. 2011).

Unilateral and multilateral agency, in contrast, share a focus on more structured, somewhat hierarchical approaches to decision making where certain member group(s) take a leading role (e.g., Gulati et al. 2012, O'Mahony and Karp 2020). Unilateral agency represents a top-down model where a specific member group assumes dominant control, relegating other actors to peripheral roles. This resembles an orchestrator-led boundary-organization in which a central architect steers decision making (e.g., Gulati et al. 2012). Multilateral agency also involves a concentration of power, but multiple parties can share authority in collaborative projects. In contrast to decentralized agency that is also embedded in collaborative projects, multilateral agency involves more coordination across projects and members who work collaboratively to align on their goals. Hence, both unilateral and multilateral agency involve some form of authority structure with less emphasis on equality and self-organization. We thus aggregate these two themes into the dimension "*concentrated agency*", while noting that "multilateral agency" is really a hybrid concept that sits somewhere in between distributed and concentrated agency, given its combination of decentralized collaborative projects and increased coordination.

### **A Process Model of the Evolution of Boundary Organizations**

The novelty of our work lies less in developing these dimensions which have high resemblance with concepts from prior work on collaborative organizing (e.g., Gulati et al. 2012; Fjeldstad et al. 2012, Jarvenpaa and Välikangas 2016, Grodal and O'Mahony 2017). Instead, our key contribution lies in uncovering the temporal sequence of these concepts that can explain the evolution of boundary organizations. Our analysis of the sequence and relationships between the themes in the visual map (Figure 3) enabled us to identify temporal patterns that inform our process model. First, projective agentic mechanisms (envisioning and relational influencing) and distributed agency (equalized and decentralized agency) co-occurred and mutually reinforced each other. Second, practical evaluative

mechanisms (resource leveraging and peer-pressuring) and a shift to more concentrated agency (unilateral agency) were mutually reinforcing. Combining agentic mechanisms and loci of agency, for our formal model, we thus distinguish between *distributed projective agency* and *concentrated practical-evaluative agency*. Second, the process through which members of Open Energy balanced collective versus member goals over time enabled us to distill two temporal patterns. Initially, Open Energy *oscillated*, swinging back and forth between emphasizing member goals and collective goals. Eventually, Open Energy shifted to *hybrid agency*, with which they simultaneously emphasized short-term member and long-term collective goals, supported by both projective (envisioning) and practical-evaluative (peer-pressuring) mechanisms and executed via multilateral agency. These temporal patterns are important elements for our process model in Figure 5.

The process model suggests that when a boundary organization is formed, it can pursue goals via two forms of agency. First, a boundary organization may initially lack a central architect and rely on *distributed projective agency* for attracting members and pursuing collective goals (see also e.g., Jarvenpaa and Välikangas 2016). Second, boundary organizations can form with a central architect that directs members towards addressing the architect's current goals (see also Gulati et al., 2012) – akin to *concentrated practical-evaluative agency*. An example would be Eclipse, a collaborative boundary organization which was initially formed under the leadership and control of IBM (O'Mahony and Karp 2022). Irrespective of the initial form of agency, inherent tensions between collective and member goals are likely to surface if members begin to interact with each other (Jarzabkowski, 2018) and if their activities cannot be intermediated by a third party (Perkmann and Schildt 2015, Perkmann et al. 2017). Our analysis substantiates that *tensions* are repeatedly brought to light through *key events* that underscore either collective or member goals. In our case, this was, for example, the need to secure resources from home organizations as Open Energy shifted from formation to implementation, thus emphasizing member goals, or the community building events that took place during the co-located modules, which brought collective goals to the fore.

As tensions (re-)surface, members respond and try to *navigate these tensions by temporarily focusing on member or collective goals*. Our analysis identified instances where members either imposed their own goals or emphasized collective goals by cultivating a sense of community. These efforts to

navigate tensions destabilize the current form of agency, creating critical junctions in a boundary organization's evolution – points where instability puts collaborative efforts at risk. In boundary organizations operating with distributed projective agency (see (a) in Phase 1 in Figure 5), members may feel compelled to impose their own goals in response to tensions triggered by key events that emphasize member goals – such as reinforcing their goals to secure buy-in and resource support from their home organization. Conversely, when a boundary organization operates with concentrated practical-evaluative agency (see (b)), key events – such as community building activities – that emphasize collective goals may lead members to shift their efforts toward the collective, diverging from the architect's prioritization of its own goals. According to our model, boundary organizations evolve through shifts in agency during these moments of instability.

In the early phases of a boundary organization's evolution, when tensions and members' efforts to navigate them destabilize the initial agency form, our model suggests that boundary organizations evolve by shifting to an *oscillating* form of agency (see shift from Phase 1 to Phase 2 in Figure 5). This entails moving back and forth between the two forms of agency – distributed projective agency and concentrated practical-evaluative agency – in a repeated way, like a pendulum. Through continuous oscillation, the boundary organization may reach a *dynamic equilibrium*, where in certain time periods collective goals are emphasized, whereas in other periods the focus shifts entirely to member goals. Members may attempt to maintain this dynamic equilibrium through continuous oscillation.

However, our model suggests that, as time passes and tensions are re-ignited by key events, agency shifts once more to a *hybrid form*, because members feel the need to actively navigate these tensions again (see shift from Phase 2 to Phase 3 in Figure 5). In the hybrid form, both types of agencies co-exist, but with a different emphasis based on timeframes. Elements of projective agency support ambitious, long-term collective goals, while practical-evaluative agency focuses on short-term member goals. The multilateral locus of agency, blending distributed and concentrated characteristics, helps achieve both: short-term member goals within collaborative projects and long-term collective goals through increased coordination across projects. Hybrid agency enables a *temporal equilibrium*, balancing short-term member goals and long-term collective goals.

The model implies that at each critical junction (see diamond shapes in Figure 5), when tensions resurface, the boundary organization needs to go through a shift in agency in order to balance collective and member goals over time. Iterating with insights from prior research, we argue that without these shifts in agency, persistent imbalances between collective and member goals are likely to result in collaborative failure. On the one hand, boundary organizations may get stuck in distributed projective agency that focuses on collective goals in the distant future. As a result, members may decide to leave the boundary organization, as they feel that their own goals are being neglected (Gerges-Yammine and ter Wal 2023). Alternatively, members may stay but decrease their ambition and participation due to a lack of interest and incentives, implying that the boundary organization may never achieve its intended purpose (Couture et al. 2023, Fan and Zietsma 2017, Grodal and O'Mahony 2017). On the other hand, boundary organizations may get stuck in concentrated practical-evaluative agency that focuses on members' present goals. Again, this results in goal imbalance reducing the ability to attract and motivate members (O'Mahony and Karp 2020) or leading to conflict escalation (Zuzul, 2019).

Finally, while the model suggests a temporal equilibrium once hybrid agency is reached, the ongoing evolution of a boundary organization can cause tensions to resurface, triggering repeated cycles of shifting agency. While boundary organizations experience stages of stability, key events that emphasize either collective or member goals repeatedly reignite tensions. As members navigate these tensions, underscoring member or collective goals, they may shift continuously between distributed projective agency, concentrated practical-evaluation agency, oscillating agency, and hybrid agency. These shifts are driven by recurring tensions between collective and member goals, which inevitably re-emerge in each phase when members engage directly with one another, prompting them to temporarily adjust their focus between these goals.

## **CONTRIBUTIONS**

Our study deepens the understanding of how changes in agency explain the evolution and, ultimately, the survival of boundary organizations. We enhance the dynamic processual understanding of boundary organizations in the following ways. First, we identify the trajectories through which members balance collective and member goals over time, revealing how boundary organizations sustain collaboration despite diverging interests. Second, we explain how shifts in agency facilitate the pursuit of both

collective and member goals, illustrating the dynamic interplay between distributed projective and concentrated practical-evaluative agency.

### **Balancing Collective and Member Goals: New Trajectories to Sustain Boundary Organizations**

Understanding the balance between collective and member goals throughout the collaborative process is crucial for explaining how and why boundary organizations can sustain over time (Langley et al. 2019). Our study offers a novel explanation for instances where boundary organizations experience stalled progress (Couture et al. 2023), underachievement (Grodal and O'Mahony 2017), or disbandment of collaborations (Gerges-Yammine and ter Wal 2023). We propose that boundary organizations can become "stuck" in agency that focuses too intently on either collective or member goals, thereby increasing the risk of conflict escalation (Zuzul 2019) or collective underachievement (Grodal and O'Mahony 2017, Couture et al. 2023). Our process model uncovers novel trajectories that explain how such collaborative failure can be prevented. First, our analysis reveals that the continuous oscillation between collective and member goals provides a means through which boundary organizations can persist amidst recurring tensions. By maintaining a dynamic equilibrium – emphasizing collective or member goals at different points in time – boundary organizations can advance member goals while preserving cooperation toward collective goals. Second, we identified a hybrid approach that enables the pursuit of short-term member goals while simultaneously dedicating long-term effort to collective goals. This hybrid approach allows boundary organizations to reach a temporal equilibrium, in which both member and collective goals are pursued simultaneously, but on different time horizons (i.e., short-term versus long-term). These trajectories offer novel insights into the challenge of how heterogeneous members of boundary organizations can stay together and pursue collective goals, despite their potentially diverging interests (e.g., O'Mahony and Bechky 2008, Gulati et al. 2012, Jarvenpaa and Välikangas 2016, Langley et al. 2019, Couture et al. 2023).

These identified trajectories highlight the importance of adopting a dynamic processual perspective. At any single point in time, boundary organizations may appear to be out of balance, focusing too much on either collective or member goals, and thus seem destined to fail. However, our findings stress the need to view goal pursuit as a dynamic process, where members continuously adjust their focus between collective and member goals to maintain balance over time. At the same time, our

process approach highlights the inherent instability in boundary organizations. As tensions between collective and member goals are never fully resolved (Langley et al. 2019, Jarzabkowski et al. 2019), key events repeatedly re-ignite these tensions that were latent or temporarily managed through oscillating or hybrid approaches. Members, in attempting to navigate these tensions, can at any time become stuck by focusing too extensively on either collective or member goals, leading to goal imbalances that may ultimately cause collaborative failure. If the boundary organization sustains over time, our model suggests that this is due to a shifts in agency.

Interestingly, this process echoes classical models of organizational evolution whereby a growing organization can be understood as a sequence of evolutionary and revolutionary phases (Greiner 1972, Gersick 1991, Romanelli and Tushman 1994). Greiner (1972), for instance, distinguishes between evolutionary phases as management styles and revolutionary phases as management problems. Each phase is the direct outcome of past phases, but at the same time also contains basic conditions for future phases. Similarly, our model suggests that each new phase in boundary organizations may entail triggers for tensions between collective and member goals, prompting members to react by temporarily shifting their focus between these goals. These navigation efforts can destabilize the current operational model of the boundary organization, igniting a “revolutionary phase” that may either result in goal imbalance (and eventual failure) or in a shift in agency, setting the foundation for the next phase.

This process model complements prior work that has focused on structural solutions for collaboration. While structural solutions – such as introducing an intermediary or broker to mediate between members with diverging interest – may be effective for collaborative efforts addressing well-defined, modular problems (Perkmann 2017, Perkmann and Schildt 2015), they are insufficient to explain collaboration aimed at solving ill-structured problems that require continuous, direct interactions between partners (Simon 1973, Jarzabkowski et al. 2019). Our study highlights how tensions inevitably re-emerge when member engage directly with one another. It explains the dynamics underlying stability and change as members temporarily shift focus between collective and member goals. The process model is generalizable to a variety of situations that involve multiple agents with diverse goals seeking to collaborate to tackle ill-structured problems. Examples include R&D consortia (e.g., Gulati et al. 2012), industry or standard-setting associations (e.g., Leiponen 2008, Simcoe 2014), multi-stakeholder

partnerships aiming for systemic change (e.g., Jarzabkowski et al. 2019, Fan and Zietsma, 2017), or ecosystems of interdependent actors that seek to align on a common value proposition (e.g., Dattée et al. 2018, Wareham et al. 2014). Our process model emphasizes that tensions are never fully resolved, but can be navigated through periodic (i.e., oscillating) or temporal (i.e., hybrid) adjustments in agency.

### **How Agency Shapes the Evolution of Boundary Organizations**

While past research has discussed the tensions that arise in boundary organizations (O'Mahony and Bechky 2008, Jarzabkowski et al. 2019, Langley et al. 2019, Cloutier and Couture 2023), less attention has been paid to how members navigate these tensions. By uncovering shifts in agency, we gain deeper insights into how members react to tensions and shape the boundary organization's evolution. Our agency perspective complements prior research that has focused on structural solutions (Perkmann and Schildt 2015), the adaptation of organizing practices (O'Mahony and Bechky 2008), the calibration of tensions (Cloutier and Couture 2023), or the role of emotions (Fan and Zietsma 2017) by delineating how agentic mechanisms unfold over time, where members alternate between future-oriented (projective) and present-oriented (practical-evaluative) dimensions of agency. Our model suggests that it is due to shifting temporal agentic orientations that members can maintain a balance between collective and member goals.

While previous research has recognized the importance of practical-evaluative agency for solving current problems in collaborative arrangements and of projective agency for taking collective action in anticipation of the future (Fan and Zietsma 2017), we expand on this work by with a process view. We illustrate how agency temporally evolves as members of boundary organizations navigate tensions between collective and member goals. In line with Emirbayer and Mische (1998), we find that at certain times, one temporal orientation (future or present) becomes dominant. This involves temporal work (e.g. Bansal et al. 2022), as members actively shape the temporal perceptions of activities within the boundary organization, emphasizing urgency vs. future impact and short-term vs. long-term goals.

However, our research also shows that when the focus is too heavily on one side, tensions resurface between collective and member goals, requiring a shift in focus. Members of boundary organizations must find a way to balance both agentic orientations and we have uncovered two means to achieve such balance: (1) continuously oscillating between the two, and/or (2) adopting a hybrid

approach. Our model demonstrates how members temporally combine the envisioning of future collective goals and grounding these goals in present realities, which are shaped by immediate needs of their home organizations. Over time, boundary organizations may become increasingly informed by the past, thus drawing more from “iterational” or “habitual” agency (Emirbayer and Mische 1998), but this is only likely to happen after multiple cycles of adjusting their agency. In addition, it is important to note that different agentic temporal orientations can co-exist (Emirbayer and Mische 1998). For example, projective envisioning may persist to some extent even as members pivot to projective-evaluative agency. However, our model highlights how the primary temporal orientation of agency shifts in response to changing circumstances, especially when key events trigger tensions between collective and member goals.

Our findings also reveal that shifts in the temporal orientation of agency coincide with changes in the locus of agency. These changes alternate between more concentrated (Gulati et al. 2012) and distributed (Jarvenpaa and Välikangas 2016, Zorina and Dutton 2012) forms, where authority may either centralize within a single member group or spread more evenly across all members. Although our study did not focus specifically on the organizational design of boundary organizations, reflecting on our findings in light of existing studies on collaborative design and organizing is insightful. The observed changes in the loci of agency suggest that boundary organizations may not conform to a single structural design (see also O’Mahony and Karp 2020). Instead, as agency changes, boundary organizations may shift between more concentrated, hierarchical designs (e.g., Gulati et al. 2012, O’Mahony and Karp 2020) and more distributed, heterarchical forms of organizing (e.g., Jarvenpaa and Välikangas 2016, Fjeldstad et al. 2012, Snow et al. 2011, Zorina and Dutton 2012).

### **Practical Implications**

While our analysis is based on a single case study, we believe our process model offers relevant insights for members of boundary organizations by providing guidance for how to stay together for the pursuit of collective goals, while at the same time, catering to the individual goals of home organizations. This model could guide organizations aiming to collaboratively address ill-structured problems that benefit from a range of perspectives, knowledge, and skills. For organizations seeking new collaborations, managing inherent tensions between collective and member goals is essential. On the one hand,

organizations may choose to start their collaborative activities by focusing on collective future goals and adopting consensus-based decision-making in which all partners have equal say. However, collaborators must also be prepared for moments when individual members may seek to prioritize their own goals, for example when they need to secure resources and legitimize the collaborative endeavor. On the other hand, boundary organizations can be formed by a central architect that rallies partners for the pursuit of its own goals. In this case, architects must be prepared for developments that emphasize collective goals and may call for more distributed and heterarchical forms of decision-making. Embracing temporary shifts in power and decision-making can be key for boundary organizations to overcome resurfacing tensions and transition from one phase to the next. Practitioners should be cautious not to become “stuck” in any particular phase of collaboration; for instance, overly focusing on collective goals that can materialize in the distant future without delivering short-term benefits to member organizations could put the collaboration at risk. Ultimately, the objective is to maintain a balance between collective and member goals, over time. One strategy to achieve this balance involves continuous switching between decision-making processes that emphasize collective goals and those that enable the pursuit of member goals. A second strategy involves the simultaneous pursuit of collective and member goals, but on different time horizons; that is, pursuing collective goals in the long term and pushing member goals in the present. Overall, our study offers a novel approach for diverse entities, such as established companies, startups, and nonprofits, to enhance collaboration and tackle ill-structured problems.

### **Limitations and Future Research**

Our study offers a process model of agency evolution within boundary organizations, yet it is framed by specific conditions and limitations that highlight areas for future research. First, our analysis focused on a boundary organization addressing an ill-structured problem characterized by significant uncertainty, where ongoing, direct interaction among members was essential. This setting naturally amplifies the diversity of goals and interpretations of how these goals might be achieved, thereby heightening tensions. As a result, our model may not be fully applicable to collaborations dealing with more defined and modular problems, where separating members with distinct goals and facilitating their cooperation through an intermediary might be more suitable (Perkmann and Schildt 2015, Perkmann 2017). Future studies should explore which problem characteristics necessitate intermediation versus continuous direct

engagement, which – according to our process model – requires shifts in agency over time. Additionally, given our case’s context within the energy sector, which has unique aspects like the significance of physical infrastructure and regulatory frameworks, further research is needed to assess the generalizability of our findings to similar sectors and problems – such as creating a sustainable mobility future – as well as to other sectors that may be less dependent on physical infrastructure and regulation.

An important question remains as to whether, how, and when a stable balance between collective and member goals can be achieved, potentially rendering (further) oscillation unnecessary. Our theorizing based on a single case study suggests a temporal sequence in which a boundary organization initially oscillates before settling into hybrid agency. Future research needs to investigate the underlying mechanisms that explain a shift to oscillating versus hybrid agency. In this context, it is important to examine whether boundary organizations can bypass oscillation (Phase 2) entirely and move directly to hybrid agency (Phase 3), as well as the conditions under which this might occur. Similarly, future studies might explore whether and how boundary organizations can learn and perhaps, oscillate less strongly after multiple iterations. In addition, research should investigate whether boundary organizations can sustain the balance achieved through hybrid agency or if re-surfacing tensions inevitably trigger new cycles of agency shift. Ultimately, with multiple iterations, habitual agency is likely to develop, where members’ actions become informed by the past through the replication of habitual routines (Emirbayer and Mische 1998). In this context, it will be interesting to study how boundary organizations learn, under what conditions routines form, and how these routines can be shaped to maintain a balance between collective and member goals.

Finally, our analysis did not evaluate the ultimate success of boundary organizations. With our single case study, we do not have a comparative account of whether boundary organizations that oscillate between collective and member goals are more successful in reaching their goals than, for example, boundary organizations that directly move to hybrid agency. A future research opportunity is to examine how different sequences of agentic mechanisms influence the effectiveness of boundary organizations. We took an important step in that direction by contributing to a better understanding of why boundary organizations may prevail, as they continuously shift their agency to navigate resurfacing tensions.

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**Table 1: Case data: types, longitudinal nature, and amount of data collected**

| <i>Time origin of data</i>                                                       | <i>Before Module 1<br/>(Jan 2016 – Apr<br/>2017)</i> | <i>Module 1 – before<br/>Module 2 (May–<br/>June 2017)</i> | <i>Module 2 – before<br/>Module 3 (Jun-Sep<br/>2017)</i> | <i>Module 3 –<br/>relaunch (Sep<br/>2017– Jan 2018)</i> | <i><b>Total</b></i> |
|----------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|---------------------|
| <b><i>Transcribed formal and informal Interviews (# of interviews)</i></b>       |                                                      |                                                            |                                                          |                                                         |                     |
| Program managers                                                                 | 7                                                    | 4                                                          | 8                                                        | 5                                                       | 24                  |
| Utilities                                                                        | 15                                                   | 14                                                         | 9                                                        | 8                                                       | 46                  |
| Startups                                                                         | 0                                                    | 8                                                          | 5                                                        | 9                                                       | 22                  |
| <b><i>Total # of<br/>interviews</i></b>                                          | <b>22</b>                                            | <b>26</b>                                                  | <b>22</b>                                                | <b>22</b>                                               | <b>92</b>           |
| <b><i>Non-transcribed informal interviews (hours of interviews)</i></b>          |                                                      |                                                            |                                                          |                                                         |                     |
| Program managers                                                                 | 2                                                    | 2                                                          | 2                                                        | 2                                                       | 8                   |
| Utilities                                                                        | 4                                                    | 5                                                          | 6                                                        | 5                                                       | 20                  |
| Startups                                                                         | 0                                                    | 7                                                          | 7                                                        | 9                                                       | 23                  |
| <b><i>Total # of hours of<br/>informal interviews</i></b>                        | <b>6</b>                                             | <b>14</b>                                                  | <b>15</b>                                                | <b>16</b>                                               | <b>51</b>           |
| <b><i>Hours of observations</i></b>                                              |                                                      |                                                            |                                                          |                                                         |                     |
| <b><i>Total # of obs.<br/>hours</i></b>                                          | <b>16</b>                                            | <b>56</b>                                                  | <b>63</b>                                                | <b>59</b>                                               | <b>194</b>          |
| <b><i>Number of meetings observed in between modules (video conferences)</i></b> |                                                      |                                                            |                                                          |                                                         |                     |
| Member meetings<br>(Utilities & PMs)                                             | 9                                                    | 2                                                          | 2                                                        | 1                                                       | 14                  |
| PM meetings                                                                      | 2                                                    |                                                            | 1                                                        |                                                         | 3                   |
| Utilities<br>intake/progress                                                     | 6                                                    |                                                            | 2                                                        |                                                         | 8                   |
| Startups<br>intake/progress                                                      | 5                                                    |                                                            | 8                                                        |                                                         | 13                  |
| <b><i>Total # of meetings</i></b>                                                | <b>22</b>                                            | <b>2</b>                                                   | <b>13</b>                                                | <b>1</b>                                                | <b>38</b>           |
| <b><i>Digital communication</i></b>                                              |                                                      |                                                            |                                                          |                                                         |                     |
| <b><i>Total # of pages<br/>with messages</i></b>                                 | <b>147</b>                                           | <b>102</b>                                                 | <b>88</b>                                                | <b>43</b>                                               | <b>380</b>          |
| <b><i>Number of Documents</i></b>                                                |                                                      |                                                            |                                                          |                                                         |                     |
| Program members<br>& design                                                      | 77                                                   |                                                            |                                                          | 4                                                       | 81                  |
| Pilot progression<br>surveys                                                     | 1                                                    | 3                                                          | 1                                                        | 1                                                       | 6                   |
| Meeting notes                                                                    | 17                                                   | 2                                                          | 4                                                        | 1                                                       | 24                  |
| Module documents                                                                 |                                                      | 73                                                         | 41                                                       | 54                                                      | 168                 |
| Others                                                                           |                                                      |                                                            |                                                          |                                                         | 19                  |
| <b><i>Total # internal<br/>documents</i></b>                                     | <b>95</b>                                            | <b>78</b>                                                  | <b>46</b>                                                | <b>60</b>                                               | <b>298</b>          |
| Public documents*                                                                |                                                      |                                                            |                                                          |                                                         | 178                 |

\* includes websites, news articles about participants, press releases about Open Energy, etc.

Figure 1: Timeline tracing “what” occurred in Open Energy, “when” it occurred, and “who” was involved

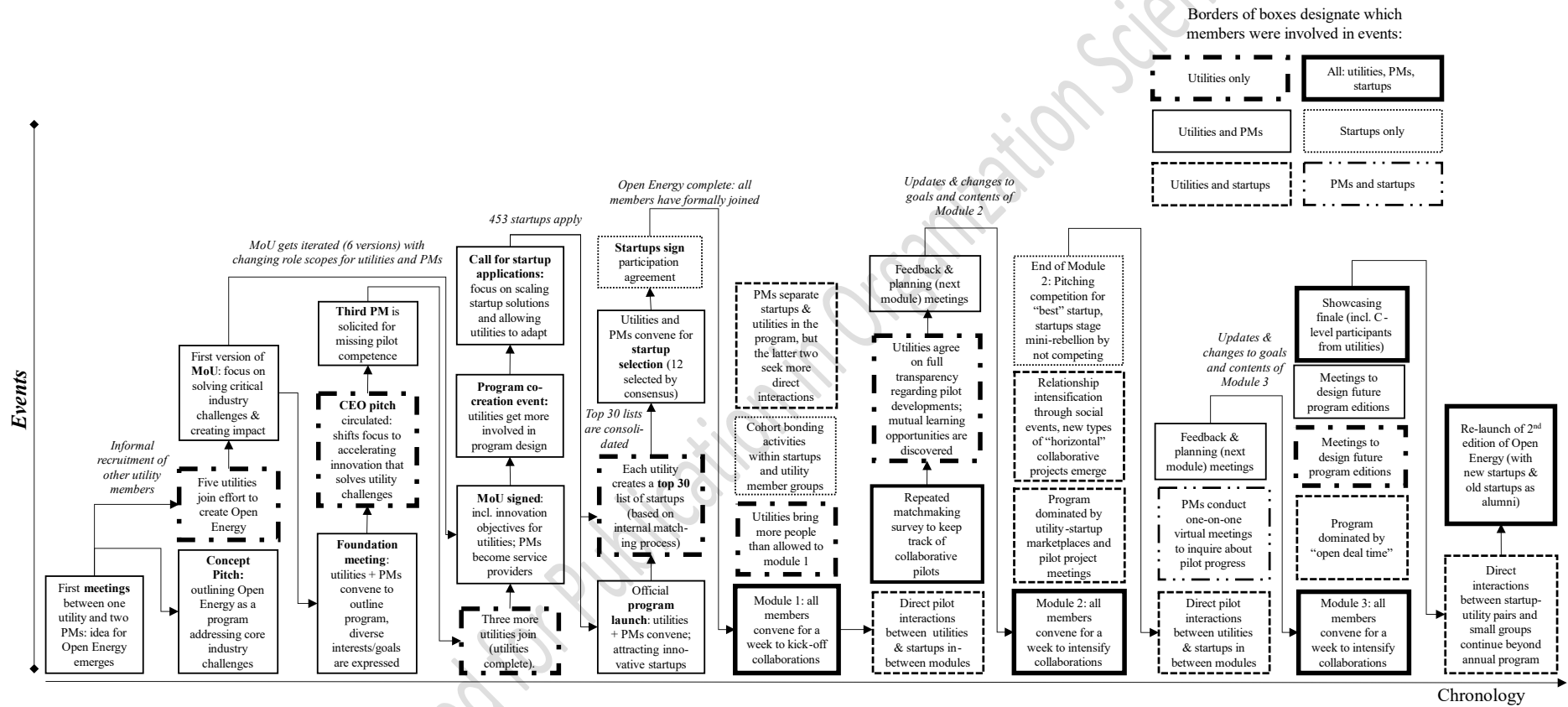


Figure 2: Temporal bracketing based on critical events and temporal goal analysis

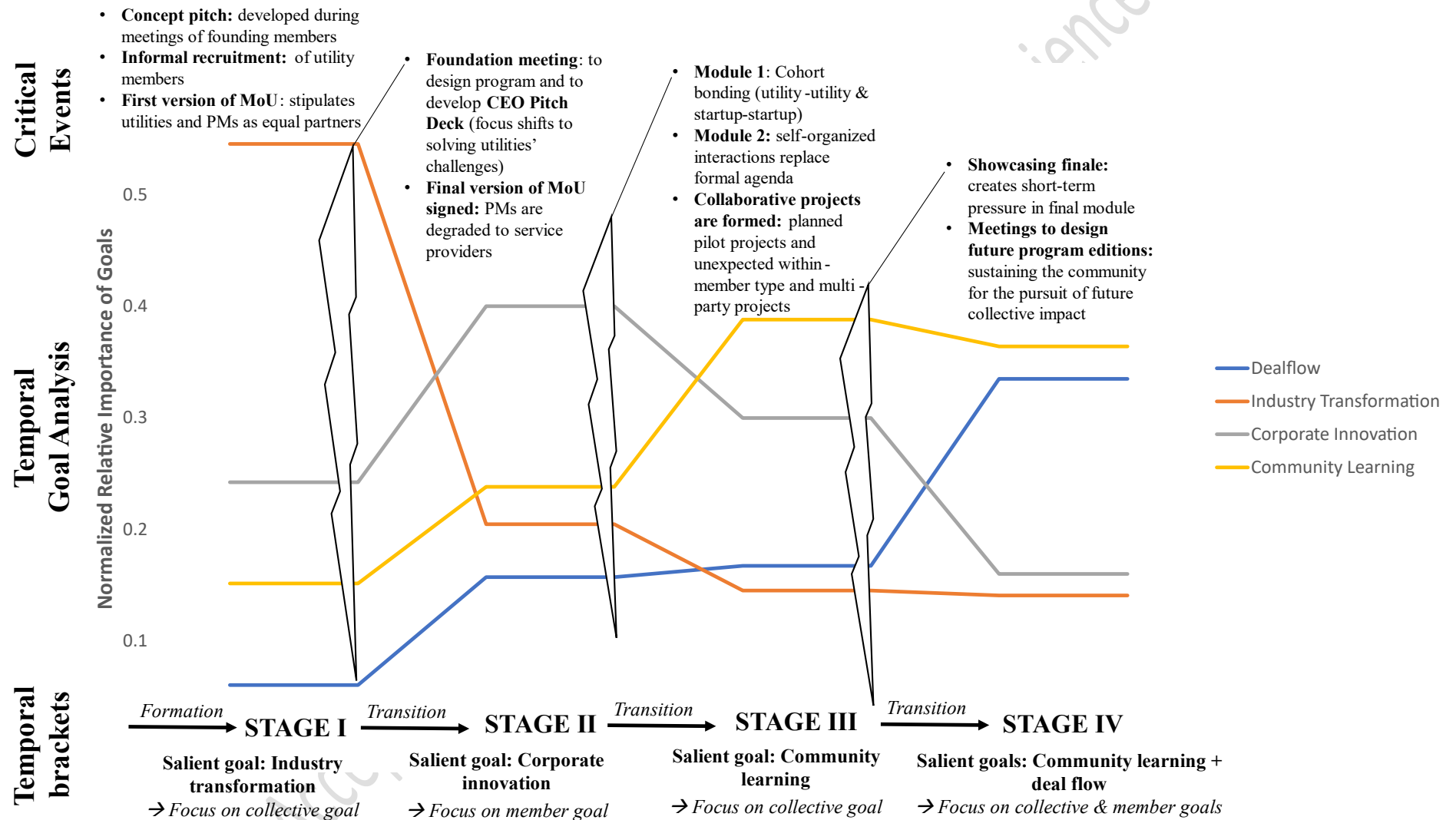


Figure 3: Visual map of how Open Energy navigated tensions by shifting agency

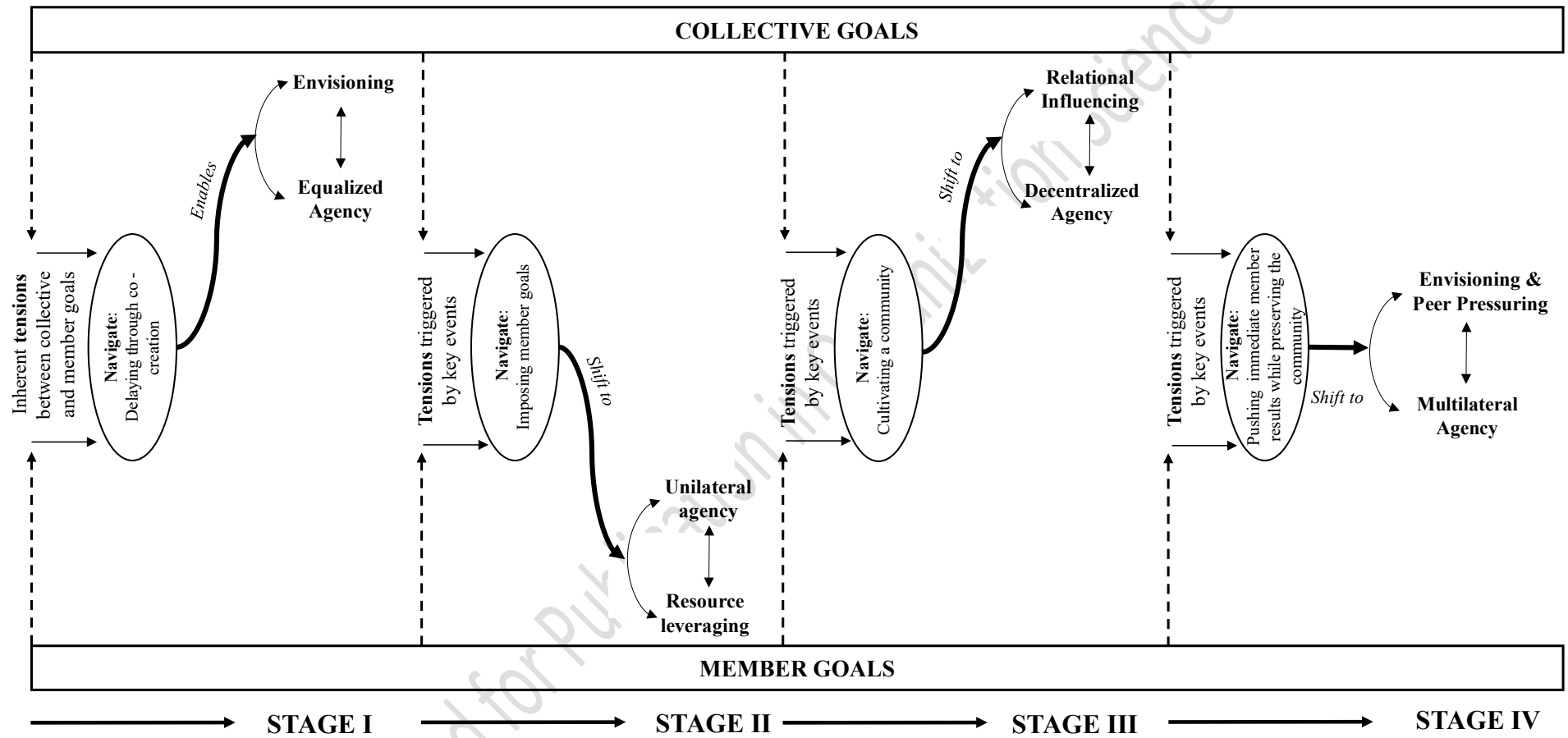


Figure 4: Data Structure

| First-cycle codes                                                                                                                                                                                                                  | Second-cycle themes                                                 | Aggregate dimensions                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>▪ “Co-existing agendas” enable benefits for all</li> <li>▪ “Co-creating the program”</li> <li>▪ Figuring things out “when we get there”</li> </ul>                                          | Delay through co-creation                                           | <i>Navigating tensions through temporal foci on collective vs. member goals</i> |
| <ul style="list-style-type: none"> <li>▪ Unity and support forms within startup cohort</li> <li>▪ Developing “openness and trust” within utility group</li> <li>▪ Fostering a “sense of community” across member groups</li> </ul> | Cultivating a community                                             |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Getting “buy-in” from home organizations</li> <li>▪ Enforcing “fit” between Open Energy and Home organizations</li> <li>▪ Utilities focus on corporate innovation</li> </ul>              | Imposing member goals                                               |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Pushing for short-term member goals</li> <li>▪ “Preserving the community for the future”</li> <li>▪ Bridging short- and long-term goals</li> </ul>                                        | Pushing for immediate member results while preserving the community |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Ambition to jointly “transform the industry”</li> <li>▪ Accelerating transformative startups will generate “world positive influence”</li> </ul>                                          | Envisioning                                                         | <i>Projective agency</i>                                                        |
| <ul style="list-style-type: none"> <li>▪ “Peer-to-peer learning”</li> <li>▪ “Helping” and shaping others</li> </ul>                                                                                                                | Relational influencing                                              |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Involving more people from the utility business units</li> <li>▪ Providing more resources to Open Energy</li> <li>▪ “Hosting” Open Energy at home</li> </ul>                              | Resource leveraging                                                 | <i>Practical-evaluative agency</i>                                              |
| <ul style="list-style-type: none"> <li>▪ “Pressuring” each other to close deals</li> <li>▪ “Showcasing” Open Energy</li> <li>▪ Fear of embarrassment</li> </ul>                                                                    | Peer Pressuring                                                     |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ “A leveled playing field”</li> <li>▪ “Deciding by consensus”</li> </ul>                                                                                                                   | Equalized Agency                                                    | <i>Distributed agency</i>                                                       |
| <ul style="list-style-type: none"> <li>▪ Self-organizing for outcomes</li> <li>▪ Actions occur in collaborative projects within and across member groups</li> <li>▪ Collaborations extend beyond Open Energy</li> </ul>            | Decentralized Agency                                                |                                                                                 |
| <ul style="list-style-type: none"> <li>▪ Utilities “hijack” the program</li> <li>▪ Adopting a “pay-to-play” logic</li> <li>▪ Degrading PMs to “service providers”</li> </ul>                                                       | Unilateral Agency                                                   | <i>Concentrated agency</i>                                                      |
| <ul style="list-style-type: none"> <li>▪ Solidifying collaborative projects</li> <li>▪ Unlocking additional value via cross -project coordination</li> <li>▪ Creating “standards” and alignment between projects</li> </ul>        | Multilateral Agency                                                 |                                                                                 |

Figure 5: A process model of the evolution of agency in boundary organizations

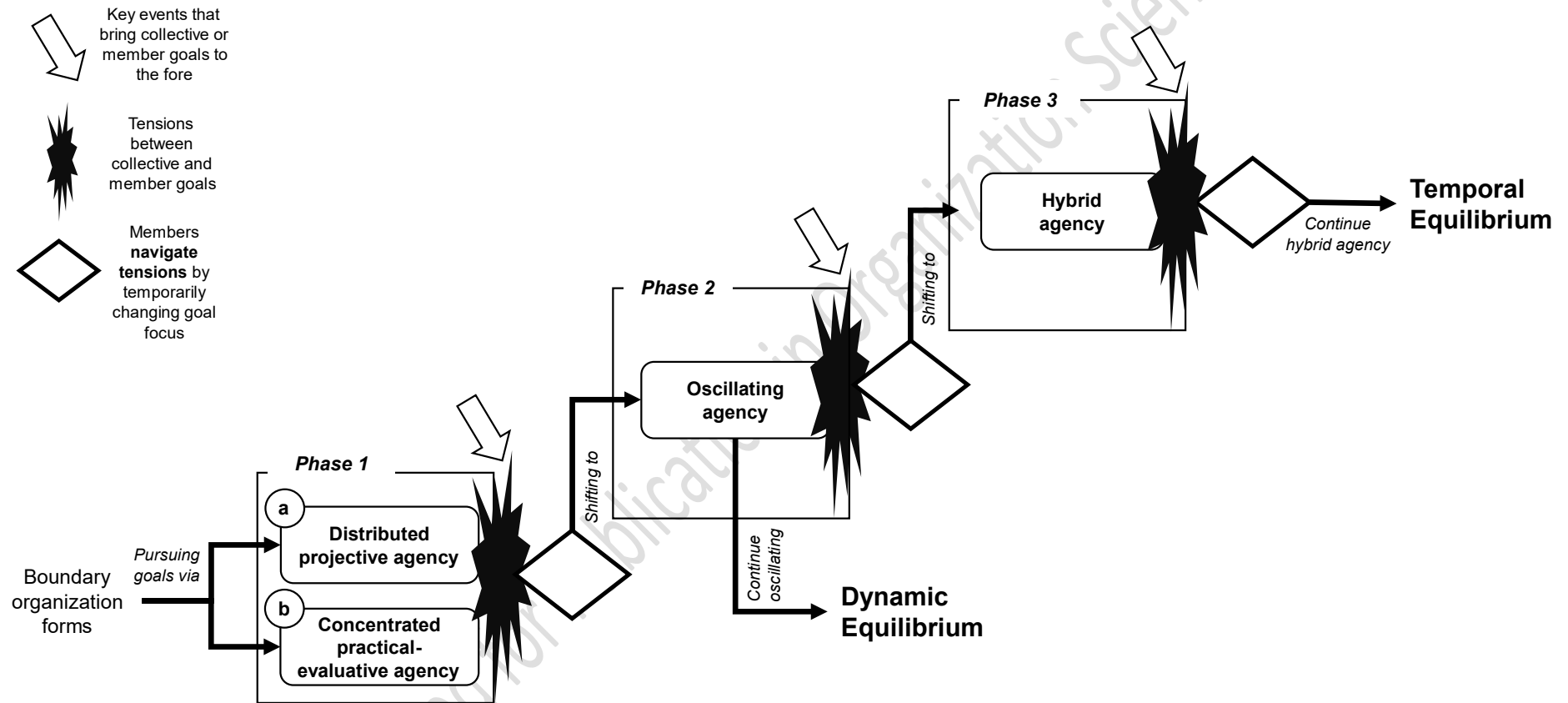
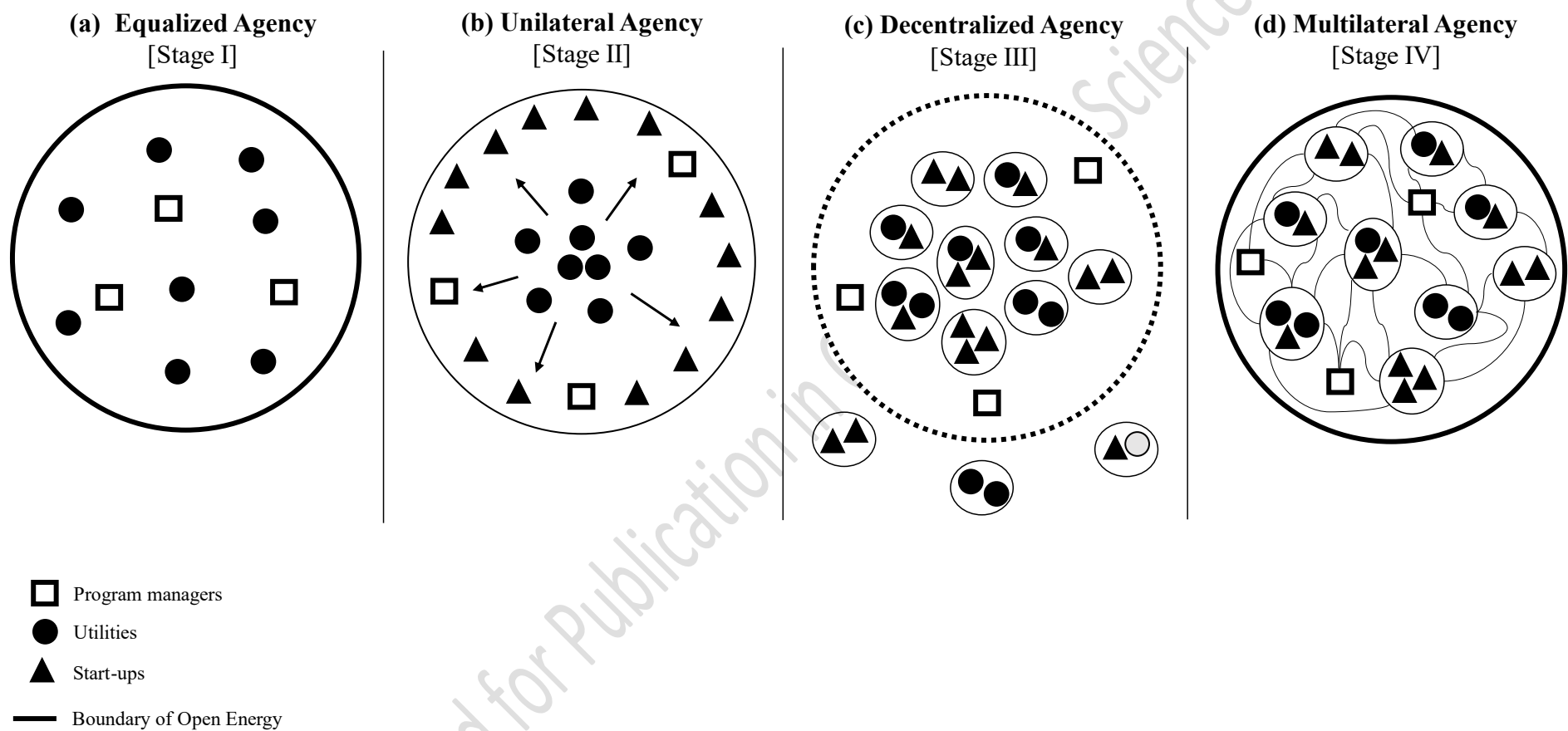


Figure 6: Visualization of the different loci of agency



## **Appendix**

### **Exemplary first-cycle and second-cycle coding**

Regarding empirical theme (1) – why goals shifted from Stage I to Stage II – we coded the reasons for Open Energy’s shift to corporate innovation. We created codes that describe utilities’ efforts to get corporate buy-in (“you have to realize that you are trying to get buy-in from internal departments”), to enforce fit between Open Energy and home organizations (“this is a business development engine”), to ultimately pursue innovation adoption (“we are trying to accelerate innovation adoption in our business”). We combined these codes into the theme of *imposing member goals*.

Regarding empirical theme (2) – *how* goals were shifted from Stage I to II – we coded for activities and behaviors via which members exercised their agency to push for different goals. We captured codes that revealed how utilities involved more people from their business units (“we will try to get as many people as exposed as possible”), provided more resources to Open Energy (“they all provided more resources to the program”), and insisted on hosting events (“utilities wanted to host”). We combined these codes into a theme that we label *resource leveraging*, which reflects the ability of member groups to use mobilized resources and leverage them to achieve desired goals.

Regarding empirical theme (3) – *who* was the main driving force in shifting the goals across the stages – our coding procedure uncovered different loci of agency. During the transition from stage I to stage II, utilities hijacked the program (“the utilities wanted to make the decisions themselves”), degraded the PMs to service providers (“we [the PMs] were afraid of losing control”), and adopted a pay-to-play logic (“we are paying, so we are going to be doing what we want to do”). We combined these codes into the theme of *unilateral agency*, which describes how a member group unilaterally determined goals and activities in the boundary organization.

Table A1 lists the themes and selective empirical evidence across all stages.

**Table A1: Themes and empirical evidence across stages**

|                                                                                                                                                               | STAGE I                                                                                                                                                                                                                                                                                                                                                                                          | STAGE II                                                                                                                                                                                                                                                                                              | STAGE III                                                                                                                                                                                                                                                                                                                                                                        | STAGE IV                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NAVIGATION OF TENSIONS</b><br>(Members navigate tensions through temporarily changing their focus on collective vs. member goals)                          | <b>Delaying through co-creation</b><br>Co-creation enables delay of tensions and allows focus on future collective goals<br><br><i>We didn't get it super shaped because we had identified that we were going to co-create this thing. [...] If you're motivated and you understand it, you're all on the same page—so you don't argue over stupid stuff. You just get it on with. (UT4, P3)</i> | <b>Imposing member goals</b><br>Utility group pushes for the dominance of their own member goals.<br><br><i>The goal is the same as for every other innovation initiative: trying to accelerate innovation adoption in our businesses, that's basically it. (UT3, P1)</i>                             | <b>Cultivating a community</b><br>Members (ignited by startups) foster deeper personal relationships that emphasize community and collective goals<br><br><i>And what we received was a kind of ecosystem to work together and collaborate and create something [...] to support all the companies: the utilities, the start-ups, and the newcomers in the future. (SU6, P1)</i> | <b>Pushing for short-term member results while preserving the community</b><br>Members pressure for short-term member results, while at the same time projecting a future for pursuing collective goals.<br><br><i>Let's just get the easiest possible thing that's approvable. (SU9, P1)</i><br><br><i>People are more interested, in talking about how Open Energy can evolve in the future [...]. How can we leverage the community for everybody's goals? (PM3, P1)</i> |
| <b>AGENTIC MECHANISMS</b><br>(How are goals shaped? What are the ways in which members exercise their agency to impact the boundary organization's dynamics?) | <b>Envisioning</b><br>Members jointly envision and work towards future possibilities of Open Energy.<br><br><i>In the current context of the energy world, change is good. Because change equals, pretty much, decarbonization. So, a faster pace of change has world positive influence. (PM1, P3)</i>                                                                                          | <b>Resource leveraging</b><br>The utility member group mobilizes home organizational resources and leverages them to achieve their own desired member goals.<br><br><i>The utilities are saying—well, I'll put the money in. I'm an investor. I'd like first options in how we develop. (UT1, P1)</i> | <b>Relational influencing</b><br>Members use their personal relationships within Open Energy to inspire and guide each other towards future collective goals.<br><br><i>And, through this personal connection, let's make this work! We know each other, we like each other, we trust each other. (SU2, P1)</i>                                                                  | <b>Peer pressuring</b><br>Members exert social influence on each other and build a sense of urgency to meet the expectations of external and internal stakeholders.<br><br><i>There was this peer pressure to show these are the deals that we can close. (SU1, P1)</i><br><br><b>Envisioning</b> (see Stage I)<br><br>Members jointly envision and work towards the long-term future of Open Energy.                                                                       |

|                                                                                                                                                                    |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                    |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                       | <i>This is going to happen again and again, and this is something that is supposed to really make an impact globally. (UT1, P1)</i>                                                                                                                                                                                                                                                           |
| <b>LOCUS OF AGENCY</b><br>(Who shapes [change in] goals in the boundary organization? Where does the capacity to act, make decisions, and exert influence reside?) | <b>Equalized</b><br>All members are equally responsible for initiating and directing actions, making decisions, and influencing outcomes of Open Energy.<br><i>The idea that we were initially going to go in here as equal partners. (PM2, P1)</i> | <b>Unilateral</b><br>One member group, i.e., the utilities, unilaterally determines the goals and activities of Open Energy.<br><i>It was also the shift where the utilities were more like—no, we're actually in charge. (PM2, P1)</i> | <b>Decentralized</b><br>Goals and activities are negotiated within smaller collaborative projects that can expand beyond the boundaries of Open Energy.<br><i>Just letting people naturally migrate to where they want to be, and who they want to talk to, and let them discuss the topics they have. (UT3, P2).</i> | <b>Multilateral</b><br>Goals and activities are negotiated within smaller collaborative projects and members coordinate across these projects to get more alignment within Open Energy.<br><i>We had to make sure that everybody set their milestones and define the different levels—whatever the different parameters of the deal they're doing or the project they're doing. (PM2, P1)</i> |

## Codes, Concepts, and Selective Empirical Evidence

Table A2: Coding of navigation of tensions and selective empirical evidence

| Delay through co-creation                                    |                    |                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Codes</i>                                                 | <i>Data Source</i> | <i>Selected Evidence</i>                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“Co-existing agendas” enable benefits for all</b>         | Interviews         | <i>One part of it is engaging utilities and the other one is helping startups grow separately from the utilities by connecting to the startup ecosystems. (PM2, P1)</i>                                                                                                                                                                                                                          |
|                                                              | Documents          | <i>Once [Open Energy] is complete, the startups stand to grow, utility companies and investors stand to profit, and the world moves faster towards a sustainable, fossil fuel-free future. (Internal marketing document)</i>                                                                                                                                                                     |
| <b>“Co-creating the program”</b>                             | Interviews         | <i>We joined the first co-creation session when all the utilities flew in. And no one knew what would come of it. It was a white-space moment. (PM1, P2)</i>                                                                                                                                                                                                                                     |
|                                                              | Documents          | <i>Utility members contribute to the program curriculum through the meetings organized by Program Managers and share their sector expertise and experience working with startups to help shape the program and positioning. (Internal meeting notes by PMs)</i><br><i>Collaboratively design the [Open Energy] curriculum! (Foundation meeting, flipchart notes)</i>                             |
| <b>Figuring things out “when we get there”</b>               | Interviews         | <i>I don’t think we sat down in the beginning and said we know what we’re doing. I think it became evident as we started having discussions (UT6, P1)</i>                                                                                                                                                                                                                                        |
|                                                              | Documents          | <i>Don’t get bogged down in the details [...] or we won’t come to decisions. (Notes from program co-creation event)</i>                                                                                                                                                                                                                                                                          |
| Cultivating a community                                      |                    |                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Unity and support forms within startup cohort</b>         | Interviews         | <i>I was surprised by the positive interaction between the startups. That, I was not expecting. (SU6, P1)</i>                                                                                                                                                                                                                                                                                    |
|                                                              | Documents          | <i>Trust in your cohort, think of collaboration - both business and personal - as early as possible, and share your knowledge and experience with the rest. (Written feedback from SU1)</i><br><i>Forming a “startup cohort of trust and connection” (Observation notes, module 1)</i>                                                                                                           |
| <b>Developing “openness and trust” within utility group</b>  | Interviews         | <i>And I was really surprised by the positive collaboration between the utilities. That was not trivial. (SU6, P1)</i>                                                                                                                                                                                                                                                                           |
|                                                              | Documents          | <i>What has surprised me is the collaboration with the other utilities. I think there are some really interesting problems that I can discuss with the other utilities. (Observation summary, module 2)</i>                                                                                                                                                                                      |
| <b>Fostering a “sense of community” across member groups</b> | Interviews         | <i>So our actual experience was, number one, the utilities were very engaging and candid. And friendly. And so it was a very supportive environment, which is really nice—because you don’t necessarily expect that with other companies who might feel like they’re in competition with you, or with prospective customers, who may or may not feel like they want to be sold to. (SU8, P1)</i> |
|                                                              | Documents          | <i>It is a unique opportunity to create a long-term personal relationship with people that can lead you to success. (Feedback survey, final module)</i>                                                                                                                                                                                                                                          |
| Imposing member goals                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Getting “buy-in” from home organizations</b>              | Interviews         | <i>They [Executives from home organizations] like to know what’s going on with [the program] and obviously, they share it amongst themselves at high executive levels. (UT1, P1)</i>                                                                                                                                                                                                             |

|                                                                            |            |                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                            | Documents  | <i>The utility buy-in for the [Open Energy] program needs to be a combination of the innovation unit leader and the business unit leader. (Observation notes, module 1)</i>                                                                                                                                                                  |
| <b>Enforcing “fit” between Open Energy and home organizations</b>          | Interviews | <i>We were like—is this a business development engine? Or is this an accelerator? It seemed like the utilities were trying to squash our accelerator-type nurturing of the startups. (PM1, P2)</i>                                                                                                                                           |
|                                                                            | Documents  | <i>I looked at the program draft that was sent around and have one question: when do we have time to discuss potential PoCs [Proof of Concepts] with the participants? The reason why I ask this is because one of the key results of the program we want to achieve are PoC deals or commercial deals. (Slack message, UT5, P1)</i>         |
| <b>Utilities focus on corporate innovation</b>                             | Interviews | <i>The acceleration [now] focused on accelerating a pilot, rather than accelerating the product, or the teams of the startups. (UT3, P2)</i>                                                                                                                                                                                                 |
|                                                                            | Documents  | <i>The relationships the utilities will have with startups will be a very commercial one, and the push will be for innovation which the startups can duly provide to the utilities. (Internal document for module 1)</i>                                                                                                                     |
| <b>Pushing for immediate member results while preserving the community</b> |            |                                                                                                                                                                                                                                                                                                                                              |
| <b>Pushing for short-term member goals</b>                                 | Interviews | <i>We tried to close whatever we could within the timeframe of the program. (SU1, P1)</i>                                                                                                                                                                                                                                                    |
|                                                                            | Documents  | <i>Program success is dependent on the number of deals: critical structure and enough space for that has to be provided (Program management meeting before module 3)</i>                                                                                                                                                                     |
| <b>“Preserving the community” for the future</b>                           | Interviews | <i>The best thing that you guys can do is to make sure that there is another [edition of] Open Energy. (PM3, P1)</i>                                                                                                                                                                                                                         |
|                                                                            | Documents  | <i>What can we do to keep this group connected and continue to collaborate? (Feedback document, module 3)</i>                                                                                                                                                                                                                                |
| <b>Bridging short- and long-term goals</b>                                 | Interviews | <i>We realize that there are enough utilities there with enough relations built up, we just need to fill the pipes now and just take a deep breath. Don't rush over and give them a tick box, and trial is agreed—when they're not. But let's work with them over the next couple of years on building those relationships up. (SU3, P1)</i> |
|                                                                            | Documents  | <i>What aspects of the program generated the greatest degree of business value for you? For long-term business the seeds for ongoing relationships with the utilities and start-ups (Feedback document, module 3)</i>                                                                                                                        |

*Note: Words in quotation marks in code names are In-Vivo codes*

Table A3: Coding of agentic mechanisms and selective empirical evidence

| Envisioning                                                                          |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Codes</i>                                                                         | <i>Data Source</i> | <i>Selected Evidence</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Ambition to jointly “transform the industry”</b>                                  | Interviews         | <i>And it has just mushroomed into a very huge thing, with the potential for a lot of impact. (PM1, P2)</i>                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                      | Documents          | <i>There is no global utility industry accelerator program at the moment focusing on the current and future needs of the industry. (Internal meeting notes from first concept discussions)</i>                                                                                                                                                                                                                                                                                                       |
| <b>Accelerating transformative startups will generate “world positive” influence</b> | Interviews         | <i>We want to help the startups’ businesses grow. They’re all offering something that’s generally world-positive for the energy sector, so that’s good for everyone. (PM1, P3)</i>                                                                                                                                                                                                                                                                                                                   |
|                                                                                      | Documents          | <i>I perhaps naively believe there is a genuinely transformative opportunity here if we can draw out the very top startups. There’s lots of dross out there and marginal incremental stuff, but we’re aiming for a bit more here. (Slack message, UT4, P3)</i><br><br><i>Support the [start-ups] in the “energy vertical” with customer access and ideation, insights, mentorship and, potentially, funding (MoU)</i>                                                                                |
| Relational influencing                                                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Peer-to-peer learning”</b>                                                       | Interviews         | <i>The peer-to-peer learning has been tremendous. That was something that I didn’t necessarily come in for, but I think it’s something that I’ve really seen and valued. I think to some extent that may even be as valuable, if not more valuable, as in fact the access to the [startups] themselves. (UT6, P1)</i>                                                                                                                                                                                |
|                                                                                      | Documents          | <i>What a great first day! On the note of greatness: this program is so much about learning from each other (PM3, P2 on Community Slack Channel)</i>                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Helping” and shaping others</b>                                                  | Interviews         | <i>The Open Energy program forces the utilities to spend time with the startups. That gives the opportunity to the [utility] innovation guy to trust the startup and leak some information to the startup to help them. (SU5, P1)</i><br><br><i>So, people try to help each other. I genuinely feel that.” (UT3, P1)</i>                                                                                                                                                                             |
|                                                                                      | Documents          | <i>Hi All - in the spirit of openness and transparency, we are sharing the survey summary for module 1 and feedback from both the utilities and startups. It includes both the quantitative and qualitative data. Hope this is helpful. Feel free to circulate it internally. (Message on Slack channel after module 1)</i>                                                                                                                                                                          |
| Resource leveraging                                                                  |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Involving more people from the utility business units</b>                         | Interviews         | <i>Open Energy can have all this great strategy, but if the cavalry don’t come over the hill when we blow the whistle – we just get murdered, right? So it’s really about engaging the bigger business units. (UT4, P3)</i>                                                                                                                                                                                                                                                                          |
|                                                                                      | Documents          | <i>UT7, P1: I do want to ask about the space, and the size of it. So that we can accommodate as many people as possible and we can schedule our flights.<br/>UT3, P1: I think people should be able to bring as many people as they need and as it accommodates the schedule. That should be the process.<br/>UT3, P2: We need an indicative number. Like 5 people.<br/>PM3, P1: Yeah, I think that is a good number. If you need more then we have to talk. (Meeting notes from member meeting)</i> |

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|------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Providing more resources to Open Energy</b> | <i>Interviews</i> | <i>The utilities, they probably just get caught up in their own corporate culture. [...]they're better resourced organizations.(PM3, P1)</i>                                                                                                                                                                                                                                                    |
|                                                | <i>Documents</i>  | <i>Getting funding for pilots! (Flipchart notes, Member Meeting)</i>                                                                                                                                                                                                                                                                                                                            |
| <b>"Hosting" Open Energy at home</b>           | <i>Interviews</i> | <i>There were some specific deal terms that were requested. [Utility manager 1] said: we'll participate if this can come to [headquarters]. And I believe that [another] did the same [...] So basically, the thread there is pulling in innovation through their front door, creating a sense of place—and then using that as a mechanism to get approval from their leadership. (PM1, P2)</i> |
|                                                | <i>Documents</i>  | <i>The location of the modules is very important to the utilities. (Meeting notes, PM3)</i>                                                                                                                                                                                                                                                                                                     |
| <b>Peer pressuring</b>                         |                   |                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>"Pressuring" each other to close deals</b>  | <i>Interviews</i> | <i>You had startups being very aggressive, in a positive sense of saying, please, let's sit down, tell me how we can work together. And so people understood that there was an issue of urgency there, from both sides of let's make things happen. (UT3, P2)</i>                                                                                                                               |
|                                                | <i>Documents</i>  | <i>I'd shrink the length of the [third module] program by 1 or 2 days, have business units show up, and spend all the time focused on deals. Really put pressure on utilities to have announced deals before the end of the program. (Feedback document, module 2, SU11)</i>                                                                                                                    |
| <b>"Showcasing" Open Energy</b>                | <i>Interviews</i> | <i>Also, at the end of the day—because it was the closing chapter for the first round—I think we were also looking into presenting the program in a good light to stakeholders (UT5, P2)</i><br><br><i>We want to make sure that the senior executives see value in this. (UT7, P1)</i>                                                                                                         |
|                                                | <i>Documents</i>  | <i>Each utility (in collaboration with startups where needed) will present its agreed pilot and deals with the startups. (Welcome pack for module 3)</i><br><br><i>Deals were closed, more BU involvements, real quantifiable results from Open Energy were showcased, exposure for other colleagues on Open Energy. (Feedback module 3)</i>                                                    |
| <b>Fear of embarrassment</b>                   | <i>Interviews</i> | <i>I think a lot of what Open Energy did was signal to other groups within the organizations that the organization itself is serious about outside innovation—and bringing that into the company. (SU11, P1)</i>                                                                                                                                                                                |
|                                                | <i>Documents</i>  | <i>What is the point of doing these pilots if there is no path to scaling? [...] The costs for certain startups to deliver these can be extremely high. Doing a trial when you know it's not been taken seriously[by the utilities] and has no real buy-in from the "Operations team" can be very dangerous and massively expensive if you are having to fund it. (Startup slack channel)</i>   |

*Note: Words in quotation marks in code names are In-Vivo codes*

Table A4: Coding of loci of agency and selective empirical evidence

| Equalized Agency                                                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Codes</i>                                                                   | <i>Data Source</i> | <i>Selected Evidence</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“A leveled playing field”</b>                                               | Interviews         | <i>A lot of people wanted to be part of [Open Energy] because it’s pretty unique. So everybody kind of took one for the team. It’s not perfect, it’s not ideal. But it is better to be part of it than not. Like the UN or the Olympics; there’s all sorts of holes but it’s the show—you’re in or you’re not. (UT6, P1)</i>                                                                                                                                                                                                                                                                                                                                   |
|                                                                                | Documents          | <i>Share learnings amongst consortium; Rights &amp; obligations; Transparency about investments and any dealings with startup; Obligation to inform others when a utility is going to talk to a startup for a pilot; Parties here mutually agree that if there is an investment opportunity, they will not compete in an auction kind of setting (Foundation meeting, flipchart notes)</i>                                                                                                                                                                                                                                                                     |
| <b>“Deciding by consensus”</b>                                                 | Interviews         | <i>I think there was by and large an attempt to decide by consensus. (UT7, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                | Documents          | <i>One member, one vote (Flipchart notes from Foundation meeting)<br/>Agenda item number 2 is a unanimous decision-making item, so if you can’t make it please provide your recommendation in advance. (Slack message prior to foundation meeting, PM2, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                |
| Decentralized Agency                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Self-organizing for outcomes</b>                                            | Interviews         | <i>But people just wanted some kind of more open space that would let us just talk to each other. Like, get the programming out of the way of the goals a little bit. Can we just have meeting time? So we ended up adding more of that and getting rid of some of the more structured programming. (PM1, P3)</i>                                                                                                                                                                                                                                                                                                                                              |
|                                                                                | Documents          | <i>Module 2 provided more time for discussions with the various companies, it was very effective from our point of view (Module 2 feedback document, SU)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Actions occur in collaborative projects within and across member groups</b> | Interviews         | <i>But we [startups] are trying to work with each other. We are in contact with one or two of the other startups. And we are actually having meetings with them. I [...] met with their CEO and their engineers. (SU2, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                | Documents          | <i>Surprising turns in terms of collaboration (UT5 in Presentation Slide Deck)<br/>An unexpected launching pad for peer-to-peer collaborative projects (UT3 in Presentation Slide Deck)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Collaborations extend beyond the boundary organization</b>                  | Interviews         | <i>A perfect example was our guys are using [an external company outside of Open Energy] on a back end for one of our apps, one of our platforms. And the guys in [Utility 5] are using [the external company] as well. And we have some issues with how it’s working with us. Let’s just collaborate. Let’s just work together. Rather than you guys doing an approach, and we do an approach, and we’re all trying to work through different issues—why doesn’t your team just come to [country] for a few days; we’ll work together, we’ll figure out what the key issues are, and then we’ll just work with [the external company] together. (UT4, P1)</i> |
|                                                                                | Documents          | <i>And the whole point of [event at module 3] is to make it available to the wider ecosystem. I think we should really make this open. (Notes from member meeting, prior to module 3, UT7, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Unilateral Agency                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Utilities “hijack” the program</b>                                          | Interviews         | <i>But ultimately, how the startups were selected, how those choices were made, the locations of the modules—all that just was kind of just determined by the utilities. (PM2, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                | Documents          | <i>Since the real success of [Open Energy] is the number of successful pilots (preferably, projects) and investments, the utilities have a key role to play. (Startups Slack Channel)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                                                  |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Adopting a “pay-to-play” logic</b>                            | <i>Interviews</i> | <i>It’s kind of that pay-for-play kind of idea that’s been troublesome all along. They think because they put the cash in that they can control everything, even [...] You know when we developed it all together. (PM3, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                  | <i>Documents</i>  | <i>Are you [PMs] serious with the remark you would like to increase visibility of the startups beyond the consortium members? [...] The goal is to bring the consortium into business with the startups. (Slack message, UT5, P1)</i><br><br><i>Family and friends yes. Other utilities and people who represent groups of utilities who elected not to join the program no. I know most of them and they are great people but it’s the benefit to the utilities that have participated and paid I’m concerned for. (Slack message, UT6, P1, discussing participation of external partners in Module 1).</i>                                                                                   |
| <b>Degrading PMs to “service providers”</b>                      | <i>Interviews</i> | <i>We were not part of the decision-making body anymore, even though that’s how it started out. (PM3, P1)</i><br><br><i>And then, utilities also play the role as kind of supervisors. So in those cases, a utility is both a participant, supervisor, and a co-manager or something. (PM2, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                  | <i>Documents</i>  | <i>[Utility representative] says that there is an element of accelerators being service providers so we should be mindful of that. (Meeting notes, PM3, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Multilateral Agency</b>                                       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Solidifying collaborative projects</b>                        | <i>Interviews</i> | <i>There are these relationships that we have developed that we’d like to pursue. But you’ve just got take some time for our markets to start intersecting [...] So I think we’re continuing to foster that relationship if possible. (SU10, P2)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                  | <i>Documents</i>  | <i>We are also pursuing the actions that have been agreed concerning [startup 1], [startup 2], and [startup 3]; we are confident that we will have news on those very soon. I encourage utilities to actively share these developments on the deals that are ongoing; after all, this is the most important part of the program (Slack message, UT3, P1)</i>                                                                                                                                                                                                                                                                                                                                   |
| <b>Unlocking additional value via cross-project coordination</b> | <i>Interviews</i> | <i>And if there is a utility that has a significant interest in a company, but there’s some other utility that has a lot more interest—we should create more room for having one of us effectively doing something with the company, but having the possibility for the others to be watching close by. Because they may be the next ones to support the company. So I think that’s win-win-win. It’s positive for the startups, for obvious reasons. It is positive for the utility that took the first step. It’s also positive for the utility that kind of stayed watching there. We should really focus on trying to see this type of win-win-win relationship materialize. (UT3, P1)</i> |
|                                                                  | <i>Documents</i>  | <i>Insight: Learning how other Open Energy members innovate (Utility presentation in module 3)</i><br><br><i>Opportunity to interact with other energy startups and utilities. It enabled us to learn a lot about the ecosystem. (SU4, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Creating “standards” and alignment between projects</b>       | <i>Interviews</i> | <i>Just reminding people of what needs to happen and helping us be more timely and deadline-oriented about things. (PM3, P1)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                  | <i>Documents</i>  | <i>During the last member call, there was strong interest in seeing if there are ways we can standardize + collaborate more on pilots, as this is happening in some informal ways already. To help explore this, could you all bring your internal pilot scoping forms/checklists? We will be bringing ours (and using this during the Open Space Deal Sessions to help push projects along), and it would be useful to see how similar/different they all are. This is a unique and exciting aspect of Open Energy, and we might spend time during the utility un-conference session thinking about all this. (Slack message, PM1, P3)</i>                                                    |

*Note: Words in quotation marks in code names are In-Vivo codes*