

Article

# A Process Approach to Mainstreaming Civic Energy

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**Abstract:** Civic energy has developed to become a key driver of a transition of the energy system to a locally-sourced, renewables-based economy whereby individual civic energy initiatives exhibit highly diverse forms and agency characteristics. Together they challenge the incumbent corporate, fossil-based energy system and its underlying techno-economic paradigm. For civic energy to meet this challenge, we argue that the potential for process optimization needs to be systematically assessed and propose a civic energy process design as a continuous improvement process in order to address the need for professionalization and capture the synergies presented by process standardization. The resulting Civic Energy Cycle deploys elements of creative destruction to identify alternative value propositions. The Cycle comprises Initiation, Planning, Roll-Out, Refection and Adoption phases, and a total of eleven process stages that extend beyond standardized technical and business processes; in addition to economic process objectives, the targeted social-economic and community benefits play a key role in shaping the process. The civic energy process is presented as a social transition framework that makes the shift in energy patterns manageable and acts as a mechanism that serves community needs.

**Keywords:** decentralized energy; energy transition; paradigm shifts; continuous improvement process; process enablers; community benefits

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## 1. Introduction: Civic Energy as a Paradigm Shift

“Civic energy” (CE) [1] is an umbrella term that denotes a wide range of decentralized energy models, both traditional and recently launched, and groups many close synonyms such as community energy [2], community power [3], local energy [4], regional energy [5] or zero kilometer energy [6]. CE initiatives are characterized by a rich diversity of stakeholder motivations [7] reflected in the high individuality of civic agents [8]. Their emergence and development are also each subject to specific place determinants [9]. Further, a wide range of organizational formats are to be detected [3]; these extend from small-scale, loosely organized grassroots initiatives [10] to established municipal energy utility operations. Hence “civic energy” is a term that denotes an extremely heterogeneous community. The justification for grouping such diversified activities into one sector is rooted in key common characteristics that include a commitment to local renewable energy sourcing and a perception of energy as a valuable resource as opposed to a tradable, corporately-owned commodity [11] as foreseen within the incumbent energy system. Often, but by no means always, motivational overlaps between CE and the emancipatory energy transition objectives of the Energy Democracy movement can be detected [12]. For the purposes of this paper we adopt the broad definition of civic energy put forward by the European Economic and Social Committee, namely “decentralized renewable energy generation owned (at least 50%) or operated by citizens, local initiatives, communities, local authorities, charities, non-governmental organizations (NGOs), farmers, cooperatives, or small and medium-sized enterprises (SMEs), creating a stream of local value that can stay within the region” [13],

whereby the inclusion of local value streams transcends the initial limited focus on generation. This definition explicitly excludes renewable energy investments by multinational corporations and finance consortiums with little or no local value creation.

“Civic energy” like “community energy” is an admittedly “slippery” concept for analysis [10] due to its inherent diversity and complexity in comparison with the accustomed centralized energy model, in which billing procedures follow the one-directional energy flows from a central producer to a recipient consumer. However, because CE presents an “unprecedented yet potentially unrepeatable opportunity” to host an effective renewable energy transition [14], it merits a process analysis in order to capture its full potential. Significantly, countries with high shares of community energy in their energy portfolios such as Denmark and Germany lead on renewable energy deployment [15], making communities and citizens the key drivers of renewable energy transition. This has been achieved despite unrelenting opposition from the incumbent corporate energy regime [16,17] and its singular attempts to de-carbonize its business models while at the same time maintain control of the energy system. Although no official updated count of CE initiatives is available, since 2008 there has been a marked rise in initiatives focused on community renewable energy, especially in Europe with over 2800 such initiatives organized as cooperatives [18]. Additionally, the current trend towards recomunalization of community energy services, predominantly in Germany as a forerunner, is indicative: The promised cost-efficiencies of the outsourcing practices of the 80’s and 90’s have failed to materialize; instead, a decline in social standards at the workplace and severe restrictions on the implementation of municipal climate and energy agendas constitute the key outcomes, making communities less resilient to tackle future societal challenges [19]. The re-entry of municipalities into the energy sector and their preparedness to take control of local energy services provision can be viewed as a shift from the “hard”, technically complicated corporate capture path that requires an extensive backup infrastructure to the “soft”, locally sourced and administered pathway that Lovins mapped out as far back as 1976 [20]. The time lapse has been used to entrench large-scale supranational energy and distribution structures [21] at all levels of administration, adding revolutionary dimensions to the reorientation and reorganization assignment [22].

Mathews draws on the work of Freeman and Perez and Kondratiev’s wave theory to illustrate that a switch to decentralized power generation from dispersed renewable energy sources is paramount to a shift in the dominant techno-economic paradigm (TEP) [23]. According to this analysis, that identifies dynamic economy factors over long periods of time, the emergence of decentralized renewable energy marks a 6th Kondratiev-wave, while the 4th centralized, carbon lock-in TEP remains stubbornly clinging to its place, supported by vested interest and political obstruction, despite its current extension into the 5th TEP based on IT/ICT flexibility. Accelerating the rate of a paradigm shift and the reaping of its new economic opportunities is not a harmonious affair but, especially in the area of policy enablers, are only to be had by deploying Schumpeterian strategies of creative destruction [24]. In a similar vein Burke and Stephens contend from an energy democracy perspective that renewable energy transition is by no means certain and cannot become effective without confronting and destabilizing the dominant system of energy power [14]. Any initiative to reassert the democratic control of energy resources and renewable energy development addresses the question of ownership head-on [11,12].

A second set of challenges is home-grown and is posed by governance malfunctioning [25–27], which only reflects the unique, pioneering character of many civic energy initiatives. Godthau defines governance in the context of the energy challenge as the sum of “the institutions, mechanisms, and processes through which economic, political, and administrative authority is exercised”. With a view to replication potential, we consider essential processes and contend that at the present early stage of civic energy innovation, characterized by the 6th TEP shift, the design of the CE process within and beyond the organizational boundaries of the initiators is a decisive uptake factor. Further, a consensual generic civic energy process design can shorten learning curves derived from both positive and negative experiences of civic energy pioneers. Such a process design is intended as a contribution to the professionalization of CE and thereby to its capacity to challenge the carbon lock-in of the

incumbent energy system. The purpose of this investigation is, therefore, to present a quality-assured alternative to the incumbent centralized energy model in the form of a generic CE process design, which is capable of directing the social processes that drive CE initiatives. Whilst CE studies to date have focused on agency characteristics that explain the diversity of individual initiatives together with analyses of the relevant institutional arrangements, the CE process itself has not been a focus of scrutiny, leaving the potential for process optimization neglected. Consequently, a uniform process language that could host ongoing CE development is currently not available.

The rest of this paper is structured as follows: Section 2 outlines key considerations inherent to a process approach to developing a CE design framework; Section 3 integrates individual CE processes and sub-processes into a coherent continuous improvement process design, the Civic Energy Cycle, and proposes a generic CE process language; Section 4 allocates a selection of relevant CE research findings to the phases of the Cycle and discusses the implications of its adoption, and; Section 5 a level playing field for CE in energy market rulings is briefly previewed.

## 2. Methodological Approach

The above systematic considerations converge with a pragmatic response to needs encountered in the promotion of a selection of specific projected CE initiatives within a European collaborative project setting: The absence of a common process language would necessitate the transfer of complete narratives inclusive of their local framework conditions from one location to another in order to assess their potential for replication. The procedure adopted in this investigation, therefore, outlines a learning process and is characterized by the following priorities and design parameters:

1. Creation of a protective space in the sense defined by Smith and Raven as “generic spaces that pre-exist deliberate mobilization by advocates of specific innovations, but who exploit the shielding opportunities they provide” [28]. The concept draws on research in the field of sustainability transitions and the necessary regime shifts and is intended to allow niche actors to nurture and improve innovations within supportive socio-technical networks prior to their market launch. Such a space allows for risk-free creative destruction hardly attainable by mere adjustments to the conventional energy model from the sidelines.
2. Adoption of a design framework able to host a continuous improvement process (CIP). Since a key feature of civic energy is its adaptability to changing local framework conditions, the CE process needs to provide review and adjustment provisions. In structuring the CE process we adopt Deming’s classic Plan-Do-Check-Act (PDCA) cycle [29] but extend this to include a Vision element to account for diverse civic energy motivations from outside the energy process (VPDCA).
3. Selection of a quality management approach suited to handle value propositions beyond purely financial considerations. Since all initiatives intent on penetrating the market as competitors to the incumbent players are confronted by numerous formal requirements including quality management demands, an early process conformity with standards development is invaluable. However, only a few performance management systems are equipped to accommodate the complex societal value propositions based on multi-criteria decision making that are typical of civic energy. The European Foundation for Quality Management EFQM [30] is one such exception [31]; we adopt the strategic EFQM link between targeted process results and process enablers without at this stage prescribing a numerical relationship between the two.
4. Provision for a prioritization of community stakeholder interests. Since CE addresses the differing needs of civic stakeholders, these need to be articulated and assessed—and be subjected to ongoing review—via a facilitated stakeholder mobilization effort, that acts not just as a pre-amble but calls for integration into the CE process.
5. Specification of the targeted community benefits of the energy innovation. The key distinguishing characteristics between different CE processes are the benefits they deliver to a particular community. The possible gains transcend any sectoral focus and range from but are by no means

limited to stable energy pricing, independence from corporate energy interests, combatting energy poverty, financing of improved social infrastructure, increase in market value of property, improved air quality, and opportunities for citizens to contribute to community culture. In line with the EFQM-strategy these targeted results entail differentiations in both the value and supply chains inherent to the process. Also, by specifying community benefits as a product of stakeholder consultations at the outset, the need for acceptance marketing typical of corporate energy dissolves.

6. Selection of appropriate enablers to the targeted benefits. This pursuit of the EFQM-based link between results and what the Business Dictionary defines as the “capabilities, forces, and resources that contribute to the success of an entity, program, or project” helps avoid the pitfalls of scattered peripheral but target-unrelated activities and contributes to making civic energy happen in the sense specified by the locally-defined and expected benefits to the community. The possible range of enablers is as unrestricted as the targeted benefits and can include the provision of missing technical, administrative, or sector expertise, the enrolment of support of key individuals, legal empowerment from a responsible authority, the mobilization of a minimum consortium membership to substantiate a business model up to and including a skilled deployment of municipal procurement instruments.
7. Integration of all operational elements into the emerging VPDCA design framework. The list of operational process elements is by no means original and includes feasibility assessments, business model development, performance assessment, adoption, and transfer, each of which comprises a number of sub-processes. However, their relevance to the CE process is determined by the previous stages.

### 3. The Civic Energy Cycle

In this section, we present the Civic Energy Cycle as a result of the process design approach outlined above and elaborate on some of its key provisions. The proposed process design extends beyond the scope of technical and business processes in order to facilitate the integration of critical societal and environmental drivers and outcomes together with economic considerations beyond single commercial interests.

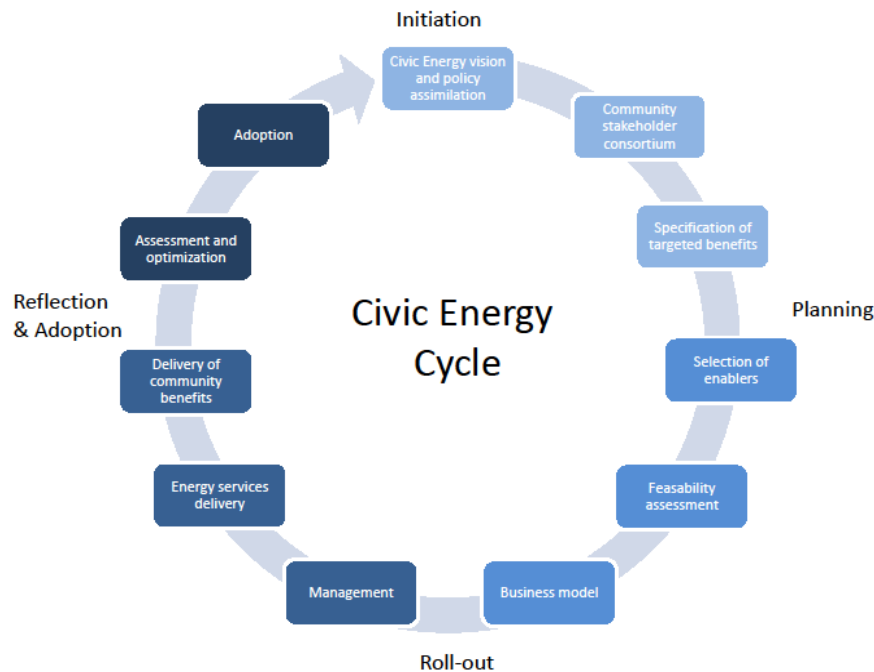
#### 3.1. Civic Energy as a Continuous Improvement Process (CIP)

The point of departure in the initiation phase, see Figure 1, need not be precise but can be characterized as a Schumpeterian pre-analytic vision that proposes an alternative energy model for a specific community. The initiation phase culminates in the provision of the value propositions and the targeted community benefits that shape the phases that follow. Postponing this discourse with community stakeholders to marketing campaigns for a pre-designed energy structure raises questions of legitimacy and motivation that could seriously undermine the whole civic venture. By contrast, in the corporate energy model, this phase is largely redundant.

Due to the lack of clear policy or legal enablers in most national legislation—with the notable exceptions of Denmark, Scotland, and Greece—the task of policy assimilation integrated into the initiation phase often needs to be conducted at regional or local level with the objective of equipping potential CE supporters with a mandate for engagement in or even support of CE initiatives. Possible outcomes can range from facilitator functions to a shareholder role of the municipality or a municipally-owned utility.

The planning phase then focuses on the enablers that drive the process and subjects these to feasibility scrutiny. The phase is completed by the business model that serves the generation of the specified values and benefits. These, in turn, form the key product of the roll-out phase, together with the delivery of the projected energy services, whereby the two sets of deliveries need not be identical. Finally, the review procedures indicated by the reflection and adoption phase culminate not only in process optimization measures but also re-shape the original process determinants. An additional

adoption element relates to the uptake of proven procedures by third parties (transfer). The target group comprises additional communities that stand to profit from pioneering process development and thereby shorten the maturation of home initiatives.



**Figure 1.** The Civic Energy Cycle: Key process elements are grouped in different color shades and allocated to the four key processes phases, i.e., Initiation, Planning, Roll-out, and Reflection and Adoption (outer circle) of a continuous improvement civic energy framework.

### 3.2. Process Stages and Sub-Processes

The allocation of necessary sub processes to the process stages shifts the focus to CE projecting within the strategic framework provided by the phase structure. Table 1 provides an overview of such sub-processes.

Under the proviso that a stakeholder endorsement of clearly formulated community benefits as process objectives has been issued, many of the sub-processes can be pursued in parallel and at different levels of intensity: A link-up to an established district heating system, for example, provides both technical connection parameters and a baseline for business model development; non-volatile feed-in tariffs, where available, can influence break-even calculations; an early balancing of enabling functions contributes to risk assessment, to name but a few potential synergies.

**Table 1.** Civic Energy Phases, Process Stages, and Sub-processes: Itemization of key civic energy assignments allocated to the process stages of Figure 1 as sub-processes within a continuous improvement framework comprising of initiate, plan, do, check, act (VPDCA) phases.

VPDCA Phase	Process Stage	Sub-Processes
Initiation (V)	Civic Energy vision and policy assimilation	<ul style="list-style-type: none"> <li>■ Pre-analytic vision and motivation</li> <li>■ Targeted energy (supply) chain scope (energy sources, generation, distribution, consumption)</li> <li>■ Geographical dimensions</li> <li>■ Preliminary steering and facilitator functions</li> <li>■ Policy alignment and recruitment of political support</li> <li>■ Stakeholder engagement strategy</li> <li>■ Mission statement</li> </ul>
	Community stakeholder consortium	<ul style="list-style-type: none"> <li>■ Stakeholder enrolment</li> <li>■ Draft of energy generation-consumption supply chain</li> <li>■ Consensus on roles in energy delivery scheme/network</li> <li>■ Consortium structure and organisational set-up</li> </ul>
	Specification of targeted benefits	<ul style="list-style-type: none"> <li>■ Stakeholder consensus on targeted benefits</li> </ul>
Planning (P)	Selection of enablers	<ul style="list-style-type: none"> <li>■ Allocation of key process enablers KPEs (structures, knowledge, processes, activities) to each benefit</li> </ul>
	Feasibility assessment	<ul style="list-style-type: none"> <li>■ Multi-criteria feasibility studies</li> <li>■ Energy supply and demand data collection</li> <li>■ Market analyses</li> <li>■ Legal provisions/regulatory arrangements</li> <li>■ Risk assessment (including barriers, trade-offs)</li> <li>■ Energy model</li> </ul>
	Business model	<ul style="list-style-type: none"> <li>■ Selection/development of appropriate business model framework</li> <li>■ Key success factors and success criteria (internal/external)</li> <li>■ Installation of management structure</li> </ul>
Roll-Out (D)	Management	<ul style="list-style-type: none"> <li>■ Operational business plan</li> <li>■ Network contracts</li> <li>■ Business plan implementation</li> <li>■ Monitoring of results</li> </ul>
	Energy services delivery	<ul style="list-style-type: none"> <li>■ Infrastructure installation</li> <li>■ Infrastructure testing and commissioning</li> <li>■ Monitoring of energy flow</li> <li>■ Administration</li> </ul>
Reflection and Adoption (C, A)	Delivery of community benefits	<ul style="list-style-type: none"> <li>■ Installation of delivery mechanisms</li> <li>■ Monitoring via critical success criteria of business model</li> </ul>
	Assessment and optimization	<ul style="list-style-type: none"> <li>■ Energy delivery assessment</li> <li>■ Stakeholder assessment of achieved benefits</li> <li>■ Assessment of management performance</li> <li>■ Business Model review and adaptation</li> <li>■ Technical, organisational and entrepreneurial corrective measures</li> </ul>
	Adoption	<ul style="list-style-type: none"> <li>■ Re-alignment of targets/enablers (internal)</li> <li>■ Revision of mission statement</li> <li>■ Transfer consultation (external)</li> </ul>

### 3.3. Process Interaction

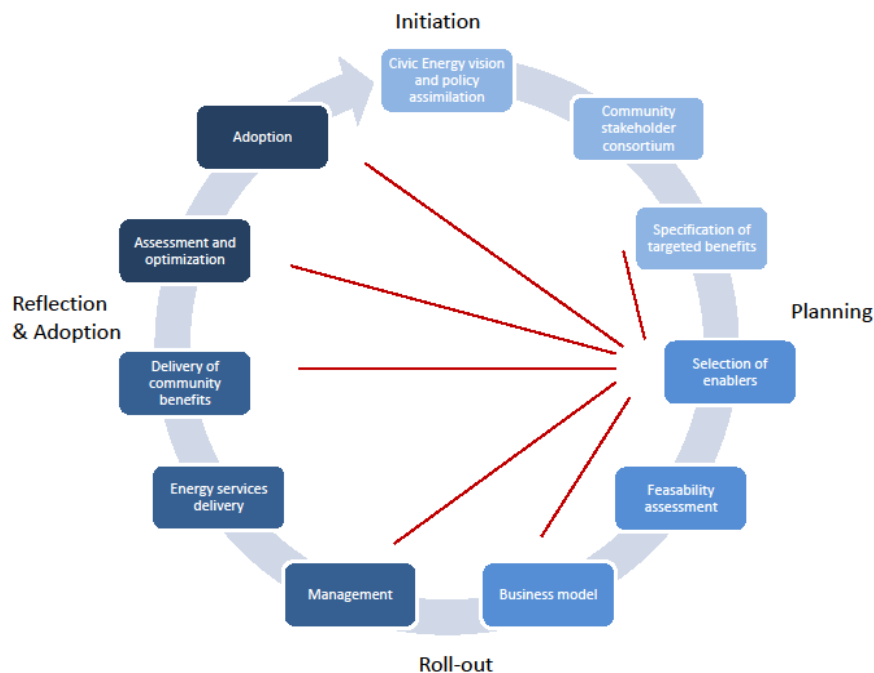
The enrolment of a TQM perspective, and, in particular, the EFQM-specific link between results and enablers, to promote civic energy initiatives not only distributes the deployment of needed competencies beyond the initial visionary inspiration but also emphasizes the interaction between individual process stages that might otherwise be treated in isolation, resulting in a loss of process efficiency and performance. With reference to the sub-processes of Table 1 the following, by no means exhaustive, selection of interdependencies between the process phases can be detected:

- The selected benefits of the initiation phase determine the suitability and the selection of the enabling factors.



- Feasibility assessments focus not only on a review of state-of-the-art technology or market trends but specifically examine how and whether the selected enablers can deliver the hoped-for benefits, drawing on the experience of related initiatives.
- The customized business model is not based on a single currency but serves to deliver the targeted range of benefits and needs to be structured accordingly.
- Management assignments focus on the processing of the enablers.
- The roll-out of deliveries relates initially to the energy services provided but also more importantly to the civic undertaking of delivering the projected benefits to the designated recipients.
- The review activities of the fourth phase build on the structure of the feasibility assessments and include self-monitoring conducted by the stakeholders of phase one.
- Adoption decisions based on the review can entail either a re-focusing of additional community needs and benefits to be served by the installed energy system or a realignment of enablers or both.

The selection, prioritization, and consequently the processing of links between the individual process stages are highly dependent on the outcomes of the initiation phase, in particular, on the formulation of the projected benefits for the community. Hence any community-specific customization will be rooted in the deployment of locally identified resources or procedures that can deliver the community vision of the initiation phase. By way of a simplified illustration, Figure 2 indicates the leverage effect exercised by the enablers selected to deliver the targeted benefits. Consequently, the roll-out of the deliveries consists essentially of a pursuit of enabling activities within pilot settings.



**Figure 2.** Civic Energy process interdependencies. Activities within individual process stages are not isolated but in many cases influence other stages of the civic energy (CE) cycle. The red lines indicate the links between the identified enablers of the planning phase to elements of the other process phases.

#### 4. Discussion

The Civic Energy Cycle presented above, together with its processes and sub-processes, represents a structured process-management approach to CE that serves as a blueprint for directing CE initiatives. The proposed CE process design is a constructivist approach that offers a response to the need, derived from pioneering but fragmented civic energy pilots, for a manageable CE process, which prioritizes individual assignments and highlights success criteria. The design framework addresses diversely

motivated stakeholders whose command of the energy supply chain may well be restricted to single but essential process elements.

The Cycle also serves to allow for a number of recent research findings to be viewed from an operational perspective and thereby contribute to the CE process. This holds true particularly for three key underlying principles of the Cycle, (i) the importance of political and social-ecological frameworks, (ii) participation and ownership aspects and (iii) the establishment of CE markets.

Investigations into framework conditions have revealed that policy enablers are not always readily available. This deficit has been traced to the fact that legal frameworks have not been constructed to empower “energy citizenship” and, therefore, need to be reformed to ensure at least partial civic ownership in renewable energy projects [3]. From an institutional perspective, and for CE ventures to succeed, institutional frameworks need to be compatible with the participation of civil society [1], but some such frameworks are decidedly incompatible. Accordingly, the search for a policy mandate has been prioritized at the outset of the Initiation phase of the Cycle. This also reflects that, at a community level, the role of place determinants and the need for a minimum degree of historically-established community cohesion to safeguard CE entrepreneurship is a prerequisite [8]. Bouwens adds that, beyond the initiation requirements, active community participation is a condition for success in financing the transition of energy systems [7].

Much attention is devoted in the Cycle to the recruitment, facilitation, and management of civic participation and ownership structures. Questions of identity, belonging, purpose, and community are critical in recruiting and retaining participants [10], with civic energy sometimes being more about the community than the energy [2]. This analysis is reinforced by the observation that participation in energy initiatives derives its motivation from long-term social concerns and not exclusively from profit-seeking [9]. Benefits of CE engagement are mainly located in the societal periphery of the energy production and distribution chain, with energy being the mechanism through which other agendas are achieved [14]. The activities of CE stakeholders can be conceived as networks of relationships among people and organizations struggling to negotiate the ever-changing landscape of energy policy and politics [9], whereby civic intervention in the energy system entails the entry of values and culture into a sector dominated to date by market pressures; therefore, presenting a potential source of conflict [10]. Successful CE initiatives are likely to benefit from the integration of both a “market logic” and a “community logic” into their organizational models, whereby members are more norm-driven when the community values prevail and more motivated by material incentives when a market relationship between the organization and its members is dominant [7]. In light of these considerations, the process logic purposely avoids any pre-formulated objectives and foresees that a consensus on the targeted CE benefits and all roles be generated within the host community consortium.

One consequence of the foregoing observations is that the CE market activities differ decisively from those of the supranational energy players: They serve local economies and additionally deliver non-monetary benefits to the community, both of which are differentiated in the roll-out phase of the Cycle. In this context, de Santoli et al. refute the global market rationale by demonstrating the profitability of short supply chains [6]. The participation of municipal and cooperative actors in energy generation forms a means to several ends linked to the creation and retention of value within local economies, i.e., beyond the return of value to shareholders on the global capital market [1]. The process design caters to this requirement by defining the geographical dimensions of the CE initiative at the outset, which determines the spatial boundaries of all deliveries that follow.

The promotion of community-centric energy models, which are symptomatic of an energy paradigm shift, requires elements of creative destruction in order to succeed [23]. These are included at the outset in the initiation phase, which determines the shape and focus of all process phases to follow: The specification of the targeted CE benefits replaces the single currency of centralized energy by allowing alternative social, political, and environmental value propositions to direct the energy process. By including specific community values at the outset, the resulting civic energy supply chains will differ essentially, not only from the incumbent process model but also from community to community.



Accordingly, the process deliveries of the roll-out phase extend beyond kilowatt hours or return on investment to encompass the targeted benefits to the community, which can range from improved air quality to an end to energy poverty. Hence, the process design is essentially a social transition framework that makes the TEP shift manageable and directs the deployment of resources in the pursuit of alternative objectives.

The strengths of the focused process lie, firstly, in its potential to streamline diversely motivated initiatives, and thus reduce the investment of time and resources needed to achieve market maturity by adopting a quality-assured procedure. Secondly, the proposed TQM structure can contribute to professionalizing even small-scale initiatives by alleviating formalized recognition of conformity with current quality management standards. Since the year 2000, these have adopted a process approach, whereby a process is defined as “a set of interrelated or interacting activities that transforms inputs into outputs” (ISO 9000:2000, clause 3.4.1), a rendering that can be viewed as a fairly precise synopsis of CE ambitions. Although ISO recognition seldom ranks high in initial CE priorities, its usefulness in gaining acceptance of the initiative by third parties is undisputed, whereby the main gains result from measures taken to streamline process performance. Thirdly and perhaps most importantly, the proposed process approach with its highlighting of community benefits offers substantial dissemination and communication advantages: The key addressees of CE communication include policymakers, public administrations including permitting authorities, financial/funding institutions and, above all, citizens, all of whom have decisive roles to play in establishing dependable CE stakeholder consortiums. In this context, the collaborative CE design phase can be viewed as a dress rehearsal for the stakeholder consultations to follow: Once a consensus on the targeted community benefits of a projected energy transition is reached, the enabling process falls into place and can be initiated without further procedural delays. As seen from the communication perspective, the democratic elements of the CE process are conducive to generating trust: The absence of hidden motivations in the outcomes of the initiation phase offer a competitive transparency advantage over corporate energy models cast by locally anonymous forces.

Admittedly, though, the perspective offered by such advantages increases the challenge posed in selecting and allocating appropriate enablers to clearly formulated civic energy benefits. Whereas these correlations, together with an analysis of their underlying value propositions, cannot be dealt with extensively within the context of this paper, the discussions conducted to date with a view to triggering a range of pilot schemes across Northern Europe indicate that linking enablers to benefits is a research area that could profit from collaborative, transnational cooperation across organizational boundaries.

Since the proposed Civic Energy Cycle has been conceived not as a theoretical model but as an attuned course of action, two additional areas of ongoing research will merit future attention: Firstly, the integration of the complex CE value propositions represented by the prioritization of the community benefits of civic energy into appropriate business models, and; secondly, with a view to accelerating and streamlining CE uptake, an analysis of the potential for digitalization of the featured social transition processes, which contrasts sharply with the current emphasis on digitalized harmonization of energy supply and demand levels. Further, the absence of appropriate policy enablers can present initial problems in securing mandates for experimentation at a regional or municipal level and may necessitate a creative policy mix strategy to combine niche-driven transition innovation and the destabilization of obsolete regime structures [32].

From a more systems-oriented perspective, the proposed generic process design for CE is an essential first step towards professionalization and standardization. However, any attempt to systemize diverse and locally-embedded processes is likely to encounter a widespread perception, especially in academia, that standards and innovation contradict and exclude each other. This reservation has been challenged by Egyedi and Spirico, who emphasize the role that standards can play as a starting point for change against the backdrop of materially and socio-institutionally entrenched or locked-in infrastructures [33], which precipitate any energy transition agenda. The traditional opposition to standardization has been systematically refuted by a comprehensive analysis of the impact of

standardization and standards on innovation [34]. In this review, Blind demonstrates that standards provide the basis for subsequent generations of innovation, increase the credibility of new and complementary technologies, allow the exploitation of economies of scale and reduce the various types of risks both for the users and for society. The lower innovation efficiency traceable to (entrenched) regulations can be differentiated from the reverse effect of standardization processes [35]. The positive role of standardization efforts in promoting innovation has been adopted by the International Standards Organization [36]. Accordingly, the CE Cycle provides an example of business process standardization (BPS). The decisive impact of BPS on performance and the key factors of process-time, cost, and, most notably, on quality has been demonstrated by Münstermann et al. [37].

Serious reservations against the targeted professionalization relate to the consequences of its potential success and—together with other associated measures—its widespread adoption, i.e., its transition from niche to mainstream. In his review of the policy implications of changing energy paradigms, Goldthau forecasts an era of extreme fragmentation [38]. Although intended as an accurate scientific assessment of future energy policy toolboxes, the term “fragmentation” has negative connotations that can be avoided. A substitution by the term “diversity” would reflect the biodiversity of locally available renewable energy resources. Also, diverse energy business models need not lead to uncoordinated services; the alternative energy vision is built on self-regulating, bottom-up, regional networks [39].

The empowerment of such networks as potential hosts of CE initiatives beyond the currently enrolled pilot communities marks the concluding assignment of the Civic Energy Cycle and focuses on negotiations on adaption strategies. Since the spectrum of potential participants is highly heterogeneous, they can be viewed as Multi-Stakeholder Partnerships (MSP). Hence, the pursuit of the adoption agenda stands to benefit from a CE customization of available expertise in facilitating MSPs, such as that provided by the Brouwer et al. [40].

## 5. Conclusions and Policy Implications

Energy transition is a long-term, ongoing political event [14] with the consequence that the local or civic energy process is as much a political as an energy process, which is overshadowed by the dividing line between two groups of transition promoters: those advocating a decarbonization of the incumbent centralized energy model and the proponents of decentralization. By streamlining the CE process, and thereby contributing to its professionalization it is hoped that the political choices can be kept open.

Amidst the numerous political opportunities to foster civic energy processes, one immediate policy innovation could remove existing competitive obstacles to the development and uptake of alternative CE patterns, namely, the establishment of a level playing field in energy market rulings. This option is currently on the European Commission’s agenda to rewrite its Governance package of the Clean Energy for All Europeans ruling, particularly Article 16 on Local Energy Communities [41], whereby “level” in this context merely implies that the same rights and obligations apply to both corporate energy ventures and local energy initiatives. The outcome of this undertaking, aimed at embedding the civic energy process into a policy framework, could act as a precedent for other regimes. Beyond Europe, the global rationale for promoting community ownership of renewable energy has recently been provided by the International Energy Agency’s Policy Recommendations [42]. Under equal competitive conditions, the demand for civic energy process optimization can safely be expected to increase.

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