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Implementing ISO 56000 in Energinet's Innovation Team

Introduction

Energinet, as Denmark's national energy infrastructure operator, faces rapid changes in technology and market demands in the transition to sustainable energy. To innovate effectively in this context, Energinet's 30-person innovation team can leverage the **ISO 56000 series** – a family of international standards for innovation management. ISO 56000 provides a common framework, vocabulary, and best practices to embed innovation into an organization's DNA [1]. By adopting these standards, Energinet can create a structured innovation management system that aligns with its strategic goals, encourages a culture of creativity, and systematically turns new ideas into value. This report provides an overview of the ISO 56000 series (with emphasis on ISO 56002), discusses its relevance to a public energy utility, and offers practical guidance – including implementation steps, governance models, success factors, integration best practices, and ways to overcome common challenges – for Energinet's innovation team.

Overview of the ISO 56000 Series (Innovation Management Standards)

The **ISO 56000 series** is a suite of standards developed by the International Organization for Standardization (ISO) to systematize innovation management across organizations of all sizes and sectors [2] [3]. The series was developed by experts from over 50 countries to establish a common understanding of innovation and help organizations improve their innovation capabilities [4] [5]. Table 1 below highlights the key standards in the ISO 56000 family and their focus areas:

Standard	Title (Year)	Focus / Key Guidance
ISO 56000:2020	*Innovation Management – Fundamentals and Vocabulary*	Defines fundamental concepts, principles, and terminology for innovation management [1]. Applicable to any organization or sector, it establishes a common language and understanding of innovation to support effective communication and training [1].
ISO 56002:2019	*Innovation Management System – Guidance*	Provides guidance for establishing, implementing, maintaining, and continually improving an **Innovation Management System (IMS)** [3] [6]. It covers leadership, strategy, culture, processes, and evaluation, offering a flexible framework to integrate innovation into an organization's operations. *(ISO 56002 is the core framework on which this report focuses.)*

Standard	Title (Year)	Focus / Key Guidance
ISO 56003:2019	*Tools and Methods for Innovation Partnership – Guidance*	Guides organizations on engaging in **innovation partnerships**, such as collaborating with startups, research institutions, or other companies [7]. It addresses how to identify partners, manage joint innovation projects, and create value through external collaboration – relevant for public utilities working with technology vendors or academia.
ISO/ TR 56004:2019	*Innovation Management Assessment – Guidance* (Technical Report)	Provides guidance on assessing an organization's innovation management maturity and performance [8]. It helps identify gaps and improvement opportunities in the innovation system, which is useful as a starting point or periodic check for Energinet's team to evaluate their innovation capabilities.
ISO 56005:2020	*Innovation Management – Intellectual Property Management – Guidance*	Offers guidelines for managing **intellectual property (IP)** within innovation activities [9]. It covers strategies and processes to protect and leverage IP (patents, know-how, etc.), ensuring that innovative solutions are properly safeguarded and exploited – an important consideration when developing new energy technologies.
ISO 56006:2021	*Innovation Management – Strategic Intelligence – Guidance*	Provides guidance on using **strategic intelligence** (trend monitoring, market insights, foresight) to drive innovation [10]. This helps organizations like Energinet scan the horizon for emerging technologies, regulatory changes, and market needs, informing their innovation strategy.

Table 1: Key standards in the ISO 56000 series and their focus areas. The ISO 56000 family continues to expand; for example, ISO 56007 (guidance on idea management) and ISO 56008 (innovation measurement) have been developed recently to further support systematic innovation [11]. At the foundation of the series, ISO 56000 (fundamentals and vocabulary) and ISO 56002 (innovation management system guidance) work in tandem: ISO 56000 establishes core principles and terms, while ISO 56002 translates those principles into a management system framework.

Innovation Management Principles: ISO 56000/56002 are built on eight fundamental principles that underpin effective innovation management [12] [13]:

- **Realization of value:** Innovation should create value (financial or non-financial) for stakeholders by addressing their needs [14]. In other words, new ideas must be turned into tangible benefits (e.g. improved services or efficiency) to avoid "innovation theater" (activity with no real impact).
- **Future-focused leaders:** Leaders at all levels should be forward-looking, challenge the status quo, and inspire others with a clear innovation vision [15]. Leadership sets the tone by allocating resources and fostering an environment where innovation is a strategic priority.
- **Strategic direction:** Innovation efforts must align with the organization's overall mission and objectives [16]. A defined innovation strategy ensures that projects support Energinet's goals (such as grid reliability, green transition, or cost efficiency) and that there is a shared ambition guiding the team.

- **Culture:** A supportive culture is essential – one that encourages openness to change, calculated risk-taking, and collaboration [17]. ISO 56002 emphasizes developing shared values and behaviors that allow creativity to coexist with effective execution. For Energinet, this means cultivating a culture where engineers and staff feel safe to experiment and propose new solutions, even in a traditionally risk-averse industry.
- **Exploiting insights:** Systematically gather and use insights from diverse sources (customers, partners, emerging technologies) to drive innovation [18]. In practice, this could involve Energinet's team tapping into customer feedback, energy market trends, R&D results, and lessons from other utilities to identify innovation opportunities.
- **Managing uncertainty:** Recognize and manage the risks and uncertainties inherent in innovation [19]. The standards encourage a portfolio approach – balancing exploratory experiments with more incremental improvements – and learning through iterative testing. This principle aligns well with the energy sector's need to pilot new technologies (like battery storage or hydrogen systems) in a controlled manner to manage risk.
- **Adaptability:** The organization should be able to **adapt** its structures and processes as context changes [20]. An innovation team must remain flexible, adjusting its approach when regulations, technologies, or market conditions shift (for instance, adapting to new energy policies or disruptions in supply chains).
- **Systems approach:** Treat innovation management as a **system of interrelated elements** that is regularly evaluated and improved [13]. Rather than ad-hoc initiatives, all components – strategy, processes, people, tools – should work together towards the common goal of innovation. ISO 56002 explicitly states that organizations innovate more effectively "if all necessary activities and other interrelated or interacting elements are managed as a system" [21].

ISO 56002 provides a **structured framework (based on ISO's high-level structure for management systems)** to turn these principles into practice [22]. It covers establishing the innovation strategy and objectives, securing leadership and resources, defining processes for ideation through implementation, measuring results, and continual improvement [23]. Notably, ISO 56002 is **guidance** (not a certifiable requirements standard – the forthcoming ISO 56001 will cover requirements) [24]. This means it is flexible; Energinet's team can tailor the recommended practices to its specific context. Some organizations have nonetheless sought certification or external validation of their innovation management system against ISO 56002's guidance. For instance, **Dubai Electricity and Water Authority (DEWA)** became the first organization globally to be certified to ISO 56002 in 2019, as a mark of excellence in innovation management [25]. This underlines that even in the public utility sector, adherence to ISO 56002 is seen as a way to **consolidate innovation governance and global leadership** in innovation [26].

Relevance of ISO 56000 for Energy Sector Innovation

Innovation is imperative for energy sector organizations like Energinet, which must modernize grids, integrate renewable energy, improve efficiency, and meet climate targets while maintaining reliable service. The ISO 56000 series offers a valuable framework to manage innovation in such a **public utility/national infrastructure context** for several reasons:

- **Comprehensive, End-to-End Guidance:** ISO 56002 covers *all aspects of innovation management from the inception of an idea to its implementation* [27]. For an energy TSO, this means guidance on every step – from early-stage ideation (e.g. new grid technologies or market concepts), through development/piloting, to scaling up solutions across the national energy system. By following ISO 56002, Energinet can ensure no part of the innovation lifecycle is neglected. Enel, a global energy company, noted that ISO 56002 "covers all aspects of innovation management: from identifying business needs to implementing innovative solutions on a global scale" [28]. This

holistic coverage is crucial in energy projects, which often must go from R&D to full deployment across networks.

- **Governance and Strategic Alignment:** Adopting ISO 56002 *helps organizations consolidate their innovation governance and increase the effectiveness of innovation*, creating the conditions for a widespread innovation culture [29]. In a public utility, clear governance is key to align innovation with corporate strategy and public service mandates. The standard guides how to set up innovation roles, responsibilities, and decision-making processes so that innovation projects directly support strategic objectives (like Denmark's green transition goals). For example, Enel's Chief Innovability Officer stated that using ISO 56002 provided "confirmation that Enel's open innovation model was designed to pioneer the highest international standards," ensuring their innovation efforts are well-governed and strategically driven [30] [31]. Energinet can similarly use the framework to align its innovation portfolio with its strategic focus on sustainability, reliability, and affordability of energy.

- **Culture of Innovation in a Risk-Averse Environment:** Energy utilities often have conservative, risk-averse cultures focused on safety and reliability. ISO 56000 emphasizes building an innovation-friendly culture – one that *supports creativity, calculated risk-taking, and collaboration* while maintaining operational excellence [17]. This is particularly relevant for Energinet: by following the standard's guidance, the team can introduce practices that encourage staff to propose and test new ideas (for instance, internal innovation challenges or sandbox trials) in a controlled way. The standard's principle of "managing uncertainty" provides techniques to experiment and learn without jeopardizing core operations [19]. Over time, this can shift the culture to embrace innovation as part of the organization's identity. DEWA's experience is instructive – their CEO noted that ISO-based innovation management created "a comprehensive system that puts excellence and good governance at the forefront… [ensuring] integration and sustainability of all programs and services," ultimately enhancing creativity and global competitiveness while maintaining high reliability and quality of service [32]. In short, ISO 56002 helps reconcile the **need for innovation with the utility's mandate for safety, reliability, and governance**.

- **Stakeholder Confidence and Collaboration:** Being able to reference an international standard can increase stakeholder confidence in Energinet's innovation initiatives. ISO 56002 is applicable not just internally but also to "customers and other interested parties who seek confidence in an organization's innovation capabilities" [33]. For a public entity, demonstrating that innovation is managed systematically (and not just through ad-hoc projects) can reassure regulators, government stakeholders, and the public that resources invested in innovation are used effectively and deliver value. Additionally, the common vocabulary of ISO 56000 can facilitate collaboration with partners. Energy innovation often involves partnerships (with tech companies, startups, universities, other TSOs); using ISO 56003 guidance can help structure these partnerships so both sides have clear processes and expectations [7].

- **Better Innovation Outcomes (Value and Sustainability):** Ultimately, the value of ISO 56000 lies in improving outcomes of innovation efforts – something highly relevant to the energy sector where large investments are at stake. By implementing an innovation management system per ISO 56002, organizations have seen improvements such as **better ability to manage uncertainty, accelerated growth, reduced waste, increased revenue, and higher customer satisfaction** [34]. In an Energinet context, this could translate to achieving projects that enhance grid capacity or flexibility (growth) with fewer costly failures (reduced waste), unlocking new revenue streams (e.g. from new services or technologies), and delivering more reliable and improved services to customers (satisfaction). Moreover, aligning innovation with sustainable

development (a priority for energy companies) is facilitated by the standard – Enel explicitly linked ISO 56002 adoption to fostering solutions for the UN 2030 Sustainable Development Goals, showing how structured innovation drives progress on sustainability challenges [35].

In summary, **ISO 56000 provides an "innovation playbook" tailored for systematic, strategic, and sustainable innovation**, which is extremely pertinent for a public energy utility. It ensures that Energinet's innovation team focuses on value-added projects aligned with national energy goals, uses best practices to manage those projects, and builds an innovation culture – all while maintaining the transparency and rigor expected of a public organization.

Implementing ISO 56000 in a 30-Person Innovation Team

Implementing ISO 56000 (specifically ISO 56002's innovation management system guidelines) in Energinet's 30-person innovation team requires a structured approach. Even though 30 people is a relatively small team, the goal is to establish an **Innovation Management System (IMS)** that fits within Energinet's larger organizational context. Key considerations include phasing the implementation, setting up proper governance and roles, and aligning with existing processes. Below, we outline practical steps, an appropriate governance model, and critical success factors for this implementation.

Phased Implementation Plan

Implementing an innovation management system should be done in phases to ensure thoroughness and buy-in. Table 2 outlines a recommended phased approach with key actions at each stage:

Phase	Description & Key Actions
1. Initiation & Assessment	**Commit to Innovation Management:** Secure leadership commitment from Energinet's executives for establishing an IMS. Communicate the vision and importance of ISO 56002 adoption to the innovation team and stakeholders. **Baseline Assessment:** Assess current innovation capabilities and processes. Use ISO 56004 guidelines to conduct an innovation management **maturity assessment** [8], identifying gaps between the current state and ISO 56002 best practices. **Scope Definition:** Define the scope of the IMS – e.g. will it cover the entire innovation team's activities and how it interfaces with other departments. Clarify objectives (e.g. "improve idea-to-project conversion rate" or "achieve X innovations implemented per year") to guide the implementation.

Phase	Description & Key Actions
2. Planning & Design	**Innovation Strategy & Policy:** Formulate or refine Energinet's innovation strategy in line with corporate strategy (leveraging the ISO principle of strategic direction [16]). Develop an innovation policy document stating the purpose and principles of innovation management (e.g. commitment to value creation, openness, risk management). **Process Design:** Design the core processes of the innovation management system. This includes how the team will collect ideas, evaluate and select them, manage projects/experiments, and implement or hand off solutions. Define process workflows with stages (ideation, evaluation, development, piloting, scaling) and decision criteria. Ensure these processes incorporate ISO 56002's guidance on opportunity identification, innovation portfolio management, and learning from experimentation. **Roles & Responsibilities:** Define the roles needed for the IMS (see Governance section below). Assign owners for processes – e.g. an "Innovation Process Manager" to oversee idea pipeline, project leaders for each innovation project, and clear sponsorship from senior management for strategic oversight. **Resource Planning:** Plan the resources required – budget for innovation projects, tools (such as an idea management platform or knowledge repository), and training needs. Allocate responsibilities for providing these resources (for instance, ensure management allocates a portion of R&D budget to the innovation team's projects).
3. Implementation & Deployment	**Pilot and Roll-out:** Begin implementing the designed processes. It can help to start with a **pilot project** or a subset of the innovation pipeline to test the new system. For example, run a small innovation challenge using the new idea evaluation criteria and process. Use the pilot to refine procedures and resolve any issues. **Team Training & Engagement:** Train the innovation team (and any involved staff from other departments) on the new innovation management processes and their roles. Foster buy-in by explaining how the system will help them succeed (e.g. clearer criteria, support for taking ideas forward). Encourage an innovation culture through workshops that reinforce ISO principles like creative thinking, collaboration, and risk management [17] [19]. **Knowledge Management & Tools:** Implement supporting tools – for instance, set up an idea management software or shared innovation log to track ideas and projects. Create an "innovation playbook" or process handbook for the team, documenting methodologies (like design thinking, stage-gate, or agile sprints) that align with ISO 56002 guidance. Also, establish knowledge-sharing routines (e.g. retrospectives after each project to capture lessons learned) to build the team's collective intelligence.

Phase	Description & Key Actions
4. Monitoring & Improvement	**Performance Tracking:** Define key performance indicators (KPIs) for the innovation system (e.g. number of ideas submitted, conversion rate to projects, time-to-market for new solutions, estimated value created by innovations). Regularly measure and review these metrics. ISO 56002 emphasizes monitoring and evaluating innovation performance as part of the "Check" stage in the PDCA cycle [36] [37]. Use ISO 56008 (when available) for guidance on innovation metrics. **Periodic Reviews and Audits:** Hold periodic governance meetings (e.g. quarterly Innovation Steering Committee reviews) to assess the effectiveness of the IMS. Conduct internal audits or self-assessments against ISO 56002's framework to ensure all elements (leadership, strategy, support, operations, evaluation, improvement) are functioning. Gap analysis tools from ISO 56002 handbooks or checklists can be used. **Continuous Improvement:** Based on monitoring and reviews, implement improvements to the innovation processes. This could mean refining idea selection criteria, improving collaboration mechanisms, or providing additional training where needed. Embrace the **Plan-Do-Check-Act cycle** inherent in ISO 56002 [38] [39]: adjust plans and processes ("Act") in response to what the performance data ("Check") reveals. Over time, also adapt the IMS as Energinet's context evolves – for example, if new regulatory requirements or technologies emerge, ensure the innovation strategy and processes are updated accordingly (fulfilling the adaptability principle).

Table 2: Phases and key actions for implementing an ISO 56002-aligned Innovation Management System in Energinet's 30-person team. Each phase builds a foundation for the next: **Initiation** secures mandate and understanding, **Planning** establishes the system design, **Implementation** puts it into practice (starting small and then scaling up), and **Monitoring** ensures the system remains effective and continually improves.

Governance Model and Team Structure

A clear governance structure is essential to manage innovation systematically in a 30-person team. Given Energinet's public service context, governance should ensure both agility in innovation and accountability to organizational goals. Here is a suggested governance model and team role structure:

- **Innovation Steering Committee:** Establish a high-level committee to oversee the innovation management system. This might include Energinet's innovation team lead (head of innovation), one or two executives (e.g. CTO or VP of Strategy), and representatives from key business units. The committee's role is to set innovation direction, approve major innovation projects or investments, and integrate innovation strategy with corporate strategy. This governance layer upholds leadership commitment and ensures innovation has visibility at the top – aligning with ISO 56002's emphasis on leadership and strategic alignment [40] [41].

- **Head of Innovation / Innovation Manager:** This person leads the 30-person team and is the **owner of the IMS**. They are responsible for implementing ISO 56002 guidelines day-to-day – coordinating between sub-teams, monitoring innovation portfolio progress, and reporting to the Steering Committee. They champion the innovation culture and ensure the team adheres to the defined processes. Essentially, this role is analogous to a quality manager in a QMS, but for innovation.

- **Sub-teams or Focus Areas:** Within the 30-person group, it may be effective to organize into sub-teams focused on major innovation domains or projects. For example, Energinet might have one sub-team focusing on **grid technology innovations** (hardware, infrastructure), another on **digital innovations** (data, smart grid software), and another on **market or business model innovations** (e.g. new services or energy markets design). Each sub-team can be led by a project manager or innovation lead who coordinates that domain's ideas and projects. These sub-team leads ensure that ideas in their domain follow the IMS process (from ideation to implementation) and they serve as liaisons to the Innovation Manager.

- **Roles within Teams:** Clearly assign roles such as:

- *Ideation Facilitators or Innovation Champions:* Individuals who run brainstorming sessions, hackathons, or use idea management tools to generate and capture ideas from team members or even the wider organization. They help build the pipeline of opportunities.
- *Project Leaders:* For each chosen innovation project or pilot, designate a leader (and a small project team drawn from the 30 staff, possibly supplemented by external partners or other departments' experts). Project leaders apply the innovation process steps (experimentation, prototyping, etc.) and are accountable for progress and reporting results.
- *Innovation Analyst / Portfolio Coordinator:* A role (or small support team) that tracks the portfolio of innovation initiatives, maintains the innovation dashboard of KPIs, and administers tools and documentation. This role ensures knowledge is captured and shared, and that data informs decision-making.

- *Subject Matter Experts (SMEs):* Given the technical nature of energy, certain team members will be SMEs (in areas like electrical engineering, IT, market economics). They should be integrated into innovation projects as needed and also involved in evaluating ideas (to lend expertise). Their involvement ensures technical feasibility and coherence with existing systems.

- **Decision Rights and Pipeline Governance:** Define how decisions are made at each stage of the innovation funnel. For example, an **Idea Review Board** (which could be the innovation manager plus rotating SMEs or business unit reps) meets regularly to review new ideas against strategic criteria and decide which to move into experimentation. Later, a **Project Investment Committee** (possibly the Steering Committee or a subset) evaluates pilot results and decides on scaling or terminating projects. Having stage-gate decision points with clear criteria and responsible parties will impose discipline on the innovation process, as recommended by ISO 56002's systematic approach [13]. It also introduces accountability – important in a public organization to ensure prudent use of resources.

- **Integration with Corporate Governance:** Ensure that the innovation governance links into Energinet's broader corporate governance. For instance, major innovation projects should feed into budget cycles and strategic planning. The innovation team's objectives and KPIs should be part of the company's performance management. This alignment can be facilitated by the Steering Committee members who bridge between innovation and line management. It also resonates with ISO 56002's guidance that innovation management should not exist in a silo but be part of the organization's overall management system [42].

This governance model balances agility with oversight: the innovation team can self-manage day-to-day creative work, while strategic steering ensures alignment and support from the top. By clearly delineating roles and committees, Energinet creates a **"structure for innovation"** that embeds accountability and accelerates decision-making (e.g. quickly killing non-viable ideas and freeing

resources for promising ones). Furthermore, documenting this governance in an Innovation Charter or manual will help maintain consistency and clarity as team members or leaders change over time.

Key Success Factors and Best Practices

Successfully implementing ISO 56000 in Energinet's innovation team will depend on several critical success factors. These factors also represent best practices to integrate the ISO standards with existing processes, tools, and cultural norms:

- **Top Management Support and Vision:** Energinet's leadership must not only approve the IMS initiative but actively participate. Visible endorsement – such as the CEO or CTO regularly inquiring about innovation progress or celebrating innovation successes – will set the tone. This aligns with the ISO principle of *future-focused leaders* driving innovation [15]. Leadership should articulate a clear vision of why innovation is essential for Energinet's mission (e.g. "to ensure a sustainable and secure energy future, we must innovate continuously"). This vision guides the team and legitimizes the changes in processes and culture.

- **Strategic Alignment and Relevance:** Make sure all innovation activities are clearly linked to Energinet's strategic objectives and public commitments. Every project should answer the question: *How will this innovation help Energinet and its stakeholders?* For example, if a strategic goal is to enable 100% renewable energy on the grid, the innovation portfolio might include projects on energy storage, grid balancing technology, or digital platforms for flexibility markets. This strategic alignment ensures buy-in from other departments (who see innovation supporting their goals) and sustains funding. It also prevents "pet projects" that lack strategic relevance. Using ISO 56002's guidance on aligning innovation strategy with organizational strategy will be key [16]. A practical tip is to co-create the innovation goals with input from various stakeholders (engineering ops, IT, etc.) so there is broad agreement on priorities.

- **Integration with Existing Systems and Processes:** Energinet likely already follows certain standards (e.g. ISO 9001 for quality, ISO 14001 for environment, ISO 55001 for asset management). A best practice is to integrate the new innovation management processes into these existing management systems where feasible. Fortunately, ISO 56002 shares a common high-level structure (Annex SL) with other ISO standards, meaning it can dovetail with processes like document control, auditing, and management review [22]. For instance, incorporate innovation objectives and reviews into the regular business planning cycle; include innovation risks in the enterprise risk management register (fulfilling the *managing uncertainty* principle). Leverage existing tools – if Energinet has project management or knowledge management systems, adapt them for innovation projects rather than creating everything from scratch. Integration reduces duplication and helps culturally ("innovation" becomes seen as part of everyone's job, not an isolated silo). As an example, DEWA blended innovation management with their existing excellence programs and knowledge management, which reinforced integration and sustainability of innovation efforts across all operations [32].

- **Culture and Change Management:** Shaping the culture is perhaps the hardest part. Energinet should actively work to foster an **innovation culture** that complements its strong culture of safety and reliability. Best practices here include:

- **Empowerment and Trust:** Encourage team members to take initiative and experiment, without fear of blame if things fail (within safe limits). Create "safe zones" for innovation – e.g. a sandbox environment to test new tech on a small scale, or a policy that a certain percentage of projects can fail without penalty. This builds trust and willingness to share bold ideas.

- **Cross-functional Collaboration:** Innovation often happens at intersections of disciplines. Facilitate collaboration between the innovation team and other parts of Energinet (operations, IT, market, etc.). You might institute temporary cross-functional teams for each project or involve operations staff in brainstorming to ensure practicality. An open culture where knowledge flows across silos aligns with ISO 56002's call for leveraging a *diverse range of insights* [18].
- **Recognition and Incentives:** Recognize contributions to innovation. This could be as simple as internal awards for best ideas or prototypes, shout-outs in company communications, or even linking a portion of performance evaluations to innovation engagement. Celebrating successes (and smart failures that provide learning) reinforces the desired behavior and shows that management values innovation efforts.

- **Training and Mindset:** Invest in training the team on innovation skills and mindset. This might include creative thinking techniques, agile project methods, or customer-centric design (design thinking), etc. Also train them in the ISO framework itself so they understand the "why" behind the processes. When employees see that systematic innovation leads to tangible improvements (say, a pilot avoiding a costly outage or improving efficiency), it builds a continuous improvement mindset.

- **Effective Use of Tools and Data:** Utilizing the right **innovation management tools** can significantly aid success. For instance, adopt an idea management platform (many exist, possibly Energinet can use an internal SharePoint or dedicated software) to capture and track ideas from inception to outcome. This provides transparency and engagement (everyone can see the pipeline and contribute). Use project management tools to track pilot progress and learnings. Data is crucial – implement dashboards for innovation KPIs to make monitoring visible. For example, track how many ideas each sub-team generates, how many move forward, the average time from idea to implementation, etc. Data-driven insights will help identify bottlenecks (maybe lots of ideas but slow prototyping, or good pilots that stall before scaling) so that you can address them. Over time, this measurement focus echoes the *systems approach* and continuous improvement ethos of ISO 56002 [13]. Many top innovative companies use such metrics and systems – in fact, about 70% of the most innovative firms globally have formal innovation management systems in place to guide and monitor their innovation activities [43].

- **Quick Wins and Communication:** Early in the implementation, aim for some "quick wins" – small innovation projects that can be executed relatively fast and demonstrate the value of the new approach. For example, the team might implement a process improvement that saves some cost or deploy a new analytical tool that improves forecasting. When these wins happen, **communicate** them widely across Energinet: e.g. share a story of how using the new innovation process led to a successful outcome. This builds momentum and organizational support. It will help mitigate skepticism among any staff or management who are on the fence about the formal innovation program.

- **External Collaboration and Openness:** Best practice in innovation today often involves looking outside the organization. Energinet's innovation team should leverage ISO 56003 guidance to build partnerships – for instance, engaging with startups developing relevant energy tech or participating in international collaborations (common in the energy sector). Set up processes for open innovation: scouting and evaluating external ideas, running pilot projects with vendors or research institutions, etc. This can bring in fresh ideas and capabilities that the 30-person team alone might not have. It also positions Energinet as an innovation leader in the sector by extending its ecosystem.

By focusing on these success factors, Energinet will not just implement ISO 56000 in form, but truly embed its practices in daily operations. The common thread is **alignment** – aligning people (culture and leadership), purpose (strategy), and practice (processes/tools) towards innovation. This alignment is what turns the ISO framework from a checkbox exercise into a living system that delivers value. As Enel observed upon adopting ISO 56002, it created "the conditions for a widespread innovation culture that stimulates the creativity of employees and stakeholders and fosters new value propositions" [31] – a result Energinet can also achieve with careful implementation.

Common Challenges and Mitigation Strategies

Implementing an innovation management system in a public utility context is not without challenges. Being aware of these common challenges and proactively addressing them will increase the likelihood of success for Energinet's innovation team. Here are several typical challenges and how to mitigate them:

- **Resistance to Change:** Employees (within the innovation team or in the broader organization) may resist the new processes, perceiving them as bureaucratic or unnecessary if they are used to a more informal approach. **Mitigation:** Emphasize the purpose and benefits of the IMS at every opportunity – how it will make their work more effective and not stifle creativity. Involve team members in designing the processes (co-creation) so they have ownership. Provide training and ongoing support as they adapt to new tools or methods. Also, implement changes gradually; for example, pilot the new idea management process with a subset of people to build confidence before full rollout. Show quick-win success stories where the new system helped an idea succeed, to turn skeptics into advocates.

- **Balancing Structure and Creativity:** A risk is that formalizing innovation might be seen as adding too much structure, potentially damping creativity. **Mitigation:** Design the IMS to be *flexible* and not over-engineered. ISO 56002 deliberately does not prescribe specific methods [44] – so Energinet can allow different innovation projects to use different methodologies as appropriate (e.g. design thinking for customer-centric innovation, agile sprints for digital solutions) under the overall framework. Ensure there is room for exploration: for instance, maintain a portion of time or budget for exploratory research that isn't tightly tied to immediate KPIs. Make it clear that the process is there to support, not control, the innovators. Leadership should reinforce that creativity is valued; the structure is just to ensure follow-through and learning. As one commentary on ISO 56002 notes, **creativity and standardization can be complementary** – the key is to standardize the support system for innovation, not the act of innovating itself [45] .

- **Resource Constraints:** With 30 people, the team has limited capacity, and innovation projects can compete with daily operational demands or other initiatives. Also, budgets in utilities can be tight or scrutinized. **Mitigation:** Prioritize the innovation portfolio ruthlessly against strategic goals to focus resources on the most valuable projects. Use the IMS to say "no" or defer lower-impact ideas, thereby concentrating efforts (this is where having clear strategic alignment helps justify decisions). Seek additional resources creatively – for example, apply for government innovation grants relevant to energy, or partner with universities (who can contribute research personnel). Demonstrating early successes will also help make the case for sustained or increased innovation budgets. On the human resource side, integrate innovation objectives into individuals' performance plans so they are given time to contribute. If engineers in operations are needed part-time on a project, ensure their managers acknowledge this in work planning. Essentially, formalize and legitimize the time spent on innovation via the IMS governance.

- **Measuring Impact and Managing Expectations:** Innovation often involves long-term or uncertain outcomes. There may be pressure from stakeholders to show results quickly. Conversely, the team might struggle to measure the impact of innovation efforts (especially non-financial impacts like improved resiliency or knowledge gained). **Mitigation:** Develop a balanced set of innovation metrics that includes **leading indicators** (like engagement, number of experiments, learning milestones achieved) as well as **lagging indicators** (like revenue from new services, cost savings, reliability improvements due to innovations). Educate stakeholders that innovation ROI can take time and that a pipeline approach is needed – not every project will succeed, but a well-managed portfolio will deliver overall value. Use ISO 56004 assessment tools to periodically demonstrate improvement in innovation capability itself (e.g. shorter cycle times, more ideas sourced from employees now than before). This can reassure management that the system is progressing even if big breakthroughs take longer. Manage expectations by setting realistic goals (for instance, aim for a few small-scale implementations in year one, a major implementation in year two, etc., rather than promising immediate game-changers).

- **Cultural Apathy or Fear of Failure:** In some organizational cultures, people might be apathetic ("innovation is not my job") or fearful that proposing bold ideas could risk their reputation if the idea fails. **Mitigation:** Work on cultural incentives – assign innovation-related goals to everyone in the team (and possibly beyond, e.g. a percentage of staff have innovation in their annual objectives) so that it *is* part of their job. Cultivate an atmosphere where failure is treated as learning. This can be done by leadership openly discussing a "failure we learned from" in town halls, or having the innovation team do quick post-mortems that emphasize insights, not blame. Also, highlight positive examples when someone took a risk that didn't pan out but was still appreciated. If the team sees that even the executive level embraces smart risk-taking (as long as due diligence and learning occur), it will gradually reduce fear. Overcoming apathy also involves appealing to intrinsic motivation – many employees, especially in mission-driven utilities, will respond to the idea that their innovation could significantly contribute to society (e.g. "your idea could help Denmark reach carbon neutrality"). Tie innovation efforts back to these larger purposes to inspire participation.

- **Maintaining Momentum:** It's common for innovation initiatives to start strong and then fizzle as other pressing issues take attention. **Mitigation:** Institutionalize the innovation management system so that it has scheduled activities and cannot be easily pushed aside. For example, maintain a calendar of innovation events (quarterly hackathons, monthly idea pitch sessions, etc.) that is set a year in advance. Have the Steering Committee require updates at each meeting – this creates a cadence that keeps the team accountable to making progress. Refresh the innovation strategy annually to ensure it's exciting and relevant, which can re-energize the team with new challenges. Additionally, rotate some team members or involve new voices periodically (such as interns, or guest participants from other departments) to bring fresh enthusiasm. Using the IMS framework means innovation isn't a one-time project but an ongoing process – treat it as you would other key business processes that have regular rhythms and checkpoints.

By anticipating these challenges and addressing them through thoughtful change management and strong leadership, Energinet's innovation team can avoid common pitfalls. Many of these mitigation strategies tie back to the ISO 56002 principles – leadership commitment, culture nurturing, systematic monitoring – underscoring that the standard itself, when well-implemented, provides the tools to overcome obstacles. As DEWA's innovation lead noted, a robust innovation management system helps in "overcoming obstacles and addressing potential challenges, transforming them into opportunities to develop sustainable services and solutions" [46] . With the ISO framework, Energinet can turn challenges into learning moments and keep the innovation momentum on track.

Conclusion

Implementing the ISO 56000 series, and ISO 56002 in particular, offers Energinet's 30-person innovation team a powerful framework to elevate their innovation efforts in the energy sector. By providing structure without stifling creativity, the standards help integrate innovation into the organization's core strategy and operations. This report has outlined how ISO 56000 defines a comprehensive innovation management system – from fundamental principles to practical processes – and why this matters for a public energy utility facing the demands of the green transition and technological change.

For Energinet, the key is to **apply the guidance in a tailored way**: establishing clear governance and roles, fostering an innovation-conducive culture, and aligning every innovation initiative with the company's mission to deliver sustainable energy reliably. The recommended implementation steps and best practices show that success is as much about people and mindset as about processes and metrics. By following a phased approach and focusing on leadership, culture, and continuous improvement, the innovation team can embed ISO 56002's principles deeply into their daily work.

As evidenced by industry leaders like Enel and DEWA, adopting ISO 56002 can consolidate innovation governance, spur a culture of creativity, and ultimately yield new value for both the organization and its stakeholders [47] [32]. Energinet's innovation team, supported by the ISO 56000 framework, will be better equipped to generate and implement novel solutions – whether it's new grid technologies, digital tools, or market concepts – that help meet Denmark's energy challenges. In doing so, Energinet will not only improve its own performance but also reinforce its role as an innovative, forward-looking backbone of the national energy system. **By systematically managing innovation, Energinet can turn ambitious ideas into impactful realities**, ensuring that innovation truly drives the organization's long-term success and contribution to society.

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