

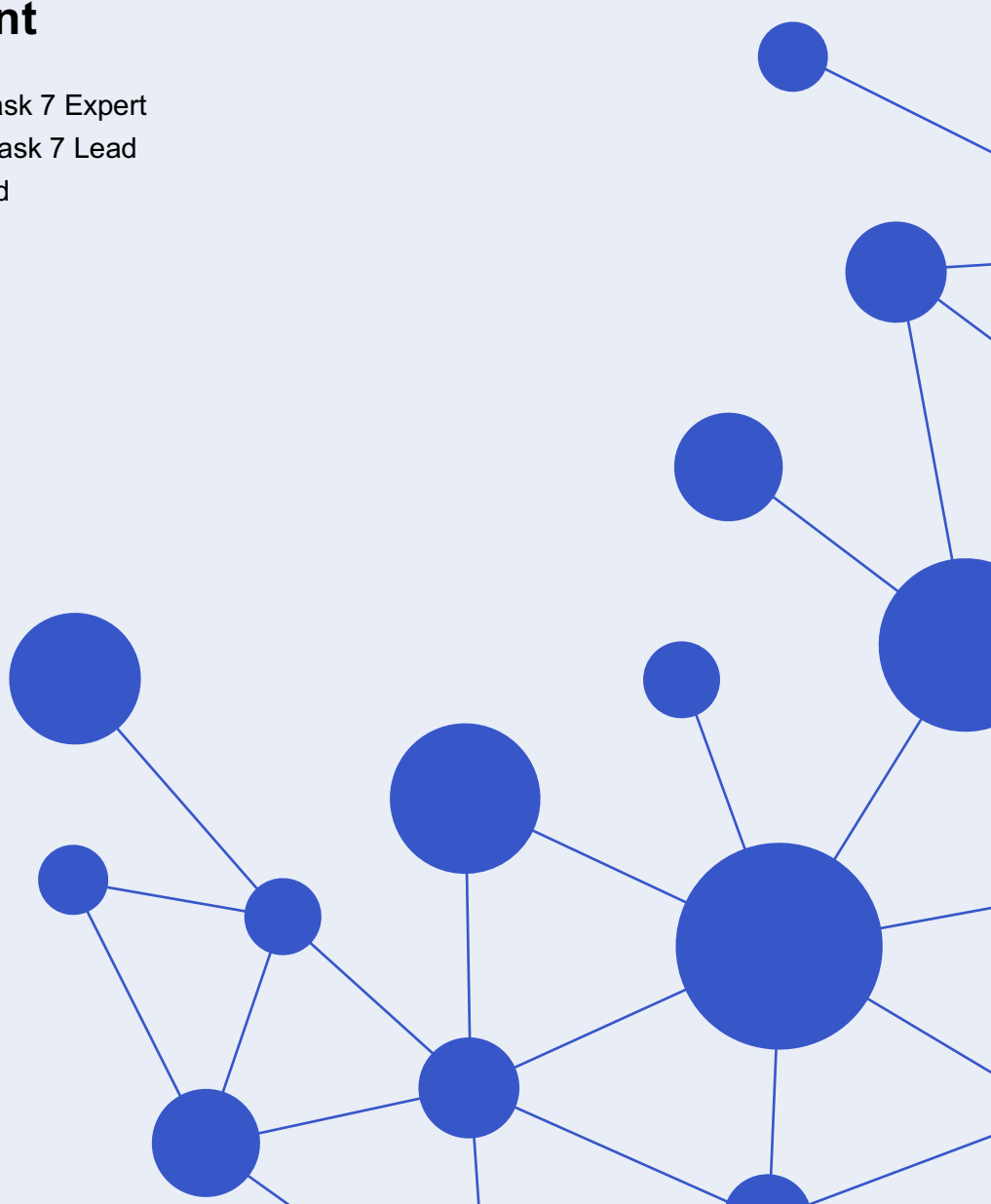
# Knowledge Transfer Project

# Terms of Reference

## Project Document

Helena Lindquist, Annex 2 Task 7 Expert  
Magnus Olofsson, Annex 2 Task 7 Lead  
Bethany Speer, Annex 4 Lead

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## Executive Summary

The Knowledge Transfer Project (KTP) has proven to be an effective method to enable sharing of expertise within the international ISGAN community. This Terms of Reference provides a description of the approach and explains how it has been applied in different ways in the first three ISGAN projects.

Lessons learned are summarized where targeted recruitment, extensive preparation, collaboration with external smart grid events, and longer workshop duration are the most important factors for a successful knowledge exchange.

Finally, it is concluded that there should be many suitable applications within the ISGAN community for knowledge sharing of relevance to leverage implementation of smart grid solutions for the clean energy transition.

## Disclaimer

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# Table of Content

- 1. Introduction .....5
- 2. Project Fundamentals.....6
  - 2.1. Theory of Change .....7
  - 2.2. Value to ISGAN .....8
  - 2.3. Key Success Factors.....9
- 3. Examples and Explanation of Different Models ..... 12
  - 3.1. Multilateral Example ..... 12
  - 3.2. Country Centric Example ..... 13
  - 3.3. Hybrid Approach..... 14
  - 3.4. Option for Implementation-Focused Knowledge Transfer..... 15
- 4. Lessons Learned and Recommendations ..... 17
- 5. Planning Future Efforts ..... 18
  - 5.1. Initiation Process ..... 18
  - 5.2. Forward Looking Strategy..... 19
- 6. Conclusions .....20

## 1. Introduction

At the sixth Clean Energy Ministerial (CEM) meeting in Merida, Mexico in May 2015, the ministers issued the Power System Challenge Joint Statement<sup>1</sup>, essentially urging the various CEM initiatives, including ISGAN, to explore and deploy more efficient methods for knowledge sharing, dissemination of experience and examples of good practices between countries on matters relating to clean energy.

Given the rapid pace of development in the field, ISGAN has an important role to play to ensure that knowledge about smart grid technologies and solutions is efficiently disseminated and shared more widely between countries and key stakeholders.

To put the words of the CEM Joint Statement into action, ISGAN Annex 2 took the initiative to create a concept for more deep-dive and interactive dialogue, focused on learning and capacity-building, to take place between peers from the policy, academic, and business communities within ISGAN. In January 2016, an ISGAN Annex 2 meeting was held in Stockholm, Sweden, in which it was recommended to initiate a task within ISGAN for knowledge transfer. The ISGAN Executive Committee endorsed the proposal at their meeting in Yokohama in March 2016 and decided to launch a Knowledge Transfer Project (KTP). This effort builds off of ISGAN's past experience delivering deep-dive workshops, such as that conducted in South Africa in 2014 with partners at the South African National Energy Development Institute (SANEDI), Eskom, 21st Century Power Partnership, and others.



Figure 1. Mexico KTP, Mexico City, 2016.

After a successful pilot project in 2016, focusing on Mexico's pathways to implement smart grids, and a consecutive project concentrating on matters related to public funding of smart grid RD&I, the Knowledge Transfer Project (KTP) concept has now become an established practice within ISGAN.

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<sup>1</sup> For the Joint Statement, see: <http://cleanenergyministerial.org/Portals/2/pdfs/CEM6-CEMPowerSystemChallenge-JointStatement.pdf>.

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The approach emphasizes individual learning and active contribution from all participants in a highly structured workshop format, co-creating concrete results informed by an inter-disciplinary group of people with complementing competences in regard to key smart grid topics. By establishing an informal atmosphere for peer knowledge exchange, participants feel comfortable sharing experiences and lessons learned, not only about success stories, but also about challenges and barriers to development. The intention is to move away from traditional presentation-based conferences to hands-on learning opportunities where all participants are actively engaged in both the learning and sharing process, and thus leave the event with a deeper level of capacity building than is likely from more traditional seminars.

The purpose of this document, the ISGAN KTP Terms of Reference (ToR) is to provide an explanation of the approach and impacts to date so that those within ISGAN and partner organizations may better understand how the program works and future opportunities to engage. This could include potential partner countries that are interested in hosting or participating in KTP events or providing other forms of in-kind or direct support.

## 2. Project Fundamentals

Knowledge transfer could shortly be summarized as mechanisms to capture, collect and exchange explicit and tacit knowledge between people, also including aspects related to skills and competence development. Theories on knowledge transfer can be found within various disciplines, including organization theory (knowledge management), sociology (learning theory), and didactics. Knowledge transfer and scaling of solutions between individuals and organizations is also an important topic within the field of Education for Sustainable Development (ESD), linked to Global Goal No. 4.<sup>2</sup>

Without elaborating further on the theoretical foundations related to the mechanisms of knowledge transfer, it is worth stating that the KTP approach is based on the following basic assumptions:

- Firstly, there is an important difference between information and knowledge<sup>3</sup>. Put simply, one could say that knowledge is something that is personal and individual,

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<sup>2</sup> Interesting research and methods on scaling (of knowledge/solutions) for sustainability is taking place e.g., in the Swedish International Centre of Education for Sustainable Development (SWEDSD) <http://swedesd.uu.se/about/>

<sup>3</sup> For references related to the "DIKW pyramid", which structurally and functionally differentiates between data, information, knowledge and wisdom, see: [https://en.wikipedia.org/wiki/DIKW\\_pyramid](https://en.wikipedia.org/wiki/DIKW_pyramid)

that comes about as a result of the intellectual processing of information. To be able to utilize information we must understand it. Unless we already have the necessary background knowledge or experience to do so we need to learn how to make sense of the information.

- Secondly, we recognize the notion of explicit (“know-what”) versus tacit knowledge (“know-how”). Tacit knowledge is often based on practical experience and is generally more difficult to codify and disseminate as it is imbedded in individuals or groups of individuals. In interactive knowledge transfer projects, like the KTPs, the focus lies on extracting the tacit and imbedded knowledge of experienced individuals through facilitating a structured peer-to-peer dialogue.

Given the above, and in order to achieve a higher degree of impact than other, more passive approaches, it is important to emphasize individual learning in the design and execution of a KTP. Hence, one must aim to create good conditions for individual learning, even though this takes place in an international group context. This is achieved by adopting a systematic and highly structured approach and ensuring that all participants are contributing actively.

## 2.1. Theory of Change

It is widely held that there is no shortage of knowledge or solutions in the field of clean energy. The challenge is rather at the organizational level, to effectively disseminate the critical knowledge to those that need it, and when they need it.

International organizations – like ISGAN and similar CEM initiatives – can act as important vehicles to disseminate knowledge and solutions globally as they have access to strong networks of key stakeholders in all the relevant fields, i.e., in the member countries’ government, research and business communities.

The basic assumption behind the KTP concept is that in a rapidly developing field like smart grids, everyone is constantly learning and no one has access to all the solutions. Therefore, all relevant stakeholders must cooperate and share knowledge and lessons learned to accelerate the pace of development, but also to avoid costly repetition of effort and duplication of mistakes. The enormous challenge posed by climate change puts additional pressure to do this as effectively and efficiently as possible.

In practice, there are three key objectives for the KTPs:

1. Encourage open and informal dialogue between stakeholders and international peers about lessons learned from grid modernization in different ISGAN countries.
2. Promote cross-organizational dialogue, inspired by experiences and results achieved in different countries.
3. Create a forum for interactive learning where all participants can genuinely contribute to, and benefit from, the collective thinking process focused on the development of smart grids.

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When designing a needs-based KTP the following aspects must be determined:

- **Supply and demand of knowledge:** Who needs what knowledge, and who holds this knowledge? To create a useful knowledge exchange it is essential to identify and understand the needs and roles of the individuals engaged in the project, e.g., primarily as “senders” or “receivers” of knowledge. Very often participants will be both senders and receivers, but having a clear understanding of the basic supply and demand of knowledge is critical to the KTP process design.
- **Prioritization of the focus topic:** Generally, the narrower and more defined the topic is, the higher quality and more in-depth the potential for real knowledge transfer. It can still be of great value, though, to focus on a system level, as long as the topic is specific and well understood by all the participants.
- **Time and space:** Practical circumstances and constraints determine the possible level of ambition for an international KTP. Generally, the more time participants can devote to engaging in the project (including preparation, workshop participation, and follow-up) the more impact can be achieved. Given that ISGAN is global and the likelihood that participants of KTPs are high-level stakeholders, the time for physical meetings is limited (i.e., 1-3 days). Therefore, the more remote preparation ahead of joint workshops, the better.
- **Structure and documentation:** It is of critical importance to employ a systematic and highly structured process to create the necessary learning environment for individuals taking part in knowledge transfer activities. To ensure traceability (e.g., “how did we come to this conclusion?”), as well as to enable the further dissemination of knowledge beyond the group of individuals taking part in the knowledge transfer exercise, it is also imperative that every step is carefully documented.

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*The narrower and more defined the topic is, the higher quality and more in-depth the potential for knowledge transfer.*

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## 2.2. Value to ISGAN

Apart from the primary purpose of disseminating key smart grid knowledge and co-creating new knowledge during workshops, the KTP concept serves another important indirect objective: namely to create strong social fabrics of peers across disciplines and international borders throughout ISGAN. Experience from the three KTPs to date shows that by working together on concrete topics – which the KTP process demands of participants – people get to know each other on a first-name basis. This can be of great value for enabling international smart grid collaboration also in other contexts.

The KTP approach is very flexible and can be used for several different purposes, for example:

- Disseminating knowledge about specific types of interventions or solutions, such as results of a policy initiative in a particular country or those of a demonstration project on a smart grid technology.



- Sharing experiences and ideating solutions at the system level that involve many different parameters.
- Providing international assistance to a particular country to advance smart grids at a strategic policy level.
- Pooling of intelligence, experiences, and ideas from different ISGAN countries to advance understanding of critical smart grid topics.

The KTP can be used to support other existing ISGAN or CEM initiatives, e.g., Annex 2 case book development, synthesized messages for policymakers, formulation of “hot topics” for roundtable discussions, identification of key areas for capacity building under the ISGAN Academy, and opportunities for developing new smart grid tools or other resources.



Figure 2. India KTP, Bangalore, 2017.

### 2.3. Key Success Factors

There are several key success factors for effective KTP implementation:

**Strong country engagement:** Strong country engagement has been an important component of the KTP’s success to date. This is true for all KTP examples, and especially in those cases of the KTPs in Mexico and India, leadership by our country partners has been essential. Bilateral country partners have convened local stakeholders to identify focus topics for the KTP, determined priority participants, invited key speakers, organized logistical elements, and offered support for post event wrap-up, including development of summary documentation.

**Preparation:** KTPs require significant preparation to ensure effective use of participants’ time. This includes careful thinking of the primary topics to be discussed and how the workshop can be organized to facilitate creative, open, and critical thinking and knowledge exchange. In some cases, such as with the Public Support KTP (see section 3.1), which spanned a few months, the participants were encourage to do “homework” to research current national approaches for public funding of smart grids, for the purpose of better informing conversations held during the workshop. The more the participants can engage in preparatory activities (e.g., helping to narrow down and prioritize topics or summarizing the status of the topic in a particular country/sector) before meeting in a workshop format, the more focused and productive the KTP workshop. It is also of great

value if participants are briefed beforehand about the situation in the other countries (or similar) of that of their peers that they will meet in the workshop; this in order to not waste valuable workshop time on “basics.”

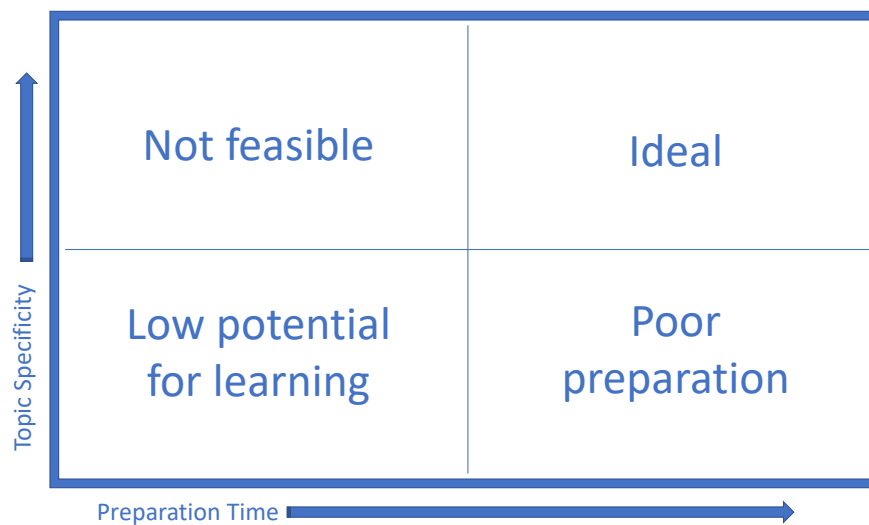


Figure 3: Relationship between KTP preparation time and topic specificity.

**Selective participation:** One of the most important takeaways to date is to ensure the right persons are in the room during the event. This requires careful work with partner countries and colleagues within ISGAN to determine which experts may be best suited to contribute. Personal recommendations are requested and CVs are carefully reviewed before selective invitations are issued. Participants are considered not only for their technical expertise, but also for their ability to convene with international peers to openly, clearly, and cordially share their insights and learn from others.

**Tying into decision making processes:** The outcomes from the KTP can be most powerful if they help to inform specific decision or policy making processes. For example, the outcomes from the Mexico KTP were used as input into the design of a national smart grid strategy. While improving the general capacity of participants is also an important impact, tying into a policy, regulatory, or programmatic process can help ensure that the information transferred is institutionalized.

**Co-host alongside other events:** KTPs require significant resources to develop, design, organize, and implement. The KTP team has found with previous efforts, that when they are required to also host other events such as public conferences, these tend to divert important person-hours. Thus, going forward, the KTP team seeks to organize its workshops alongside other public or broader events that will be fully hosted by partners and that can serve as a synergistic opportunity for cross-participation.

**KTP process design and facilitation:** Depending on the objective and the practical circumstances of a particular KTP, the preparatory activities, workshop design and facilitation techniques may differ. For instance, in the Mexico KTP the purpose was to support the joint formation of a long-term smart grid vision for national stakeholders, and to achieve this the KTP facilitator utilized backcasting as a suitable workshop technique. On the other hand, in the India KTP, the objective was to identify challenges and ideate solutions around distributed generation and smart metering. The workshop process was hence inspired by the Design Thinking logic.



**Figure 4. India KTP, Bangalore 2017: India Ministry of Power Joint Secretary Arun Kumar Verma Addressing Participants.**



**Figure 5. Mexico KTP, Mexico City 2016: Preparation of International Participants.**

### 3. Examples and Explanation of Different Models

To date, the KTP has been implemented in three forms: 1) a **multilateral approach**, in which all participants are interested in learning and sharing information on mutual topics of interest, 2) a **country centric approach**, in which a multinational group comes together to help identify potential solutions to a particular country's smart grid challenges, based on their own country experiences, and 3) a hybrid approach, designed as a "hybrid" between a country-centric and a multilateral/topical KTP.

In future, there is also potential for ISGAN to utilize a more implementation-focused knowledge transfer method involving stakeholders in a series of workshops (face-to-face and online) and individual analytical work, over a longer period of time (see section 3.3).

#### 3.1. Multilateral Example

In Genk, Belgium in 2017, a knowledge transfer project was carried out, focusing on how governments best can provide support to smart grid research, demonstration and innovation. The purpose was to share experience and learnings on strategies and tools for more effective design and execution of national support structures and programs. The project involved the following steps:

- Participating countries suggested topics to be included in a preparatory survey.
- Based on country inputs a survey was constructed covering many different aspects (both strategic and practical) of national structures and strategies for public support to SG research and innovation.
- Six countries (Austria, Germany, India, Italy, Netherlands, and Sweden) responded to the survey.
- A summary pre-workshop report of the survey responses was produced in preparation for the KTP workshop.
- Ahead of the workshop, project participants were also asked to prepare a national scene-setting presentation.



Figure 6. Public Support KTP, Genk, 2017.



Figure 7. Public Support KTP, Genk, 2017.

- On the margins of ExCo 14 in Genk, Belgium, a one-day KTP workshop was held, involving the six project participants mentioned above, but also representatives from Australia, Belgium, Canada, Russia, South Korea, United Arab Emirates, and United States (supporter, through Annex 4).
- The summary report from before the workshop was complemented with the results of the Genk workshop into a post-workshop report. This was distributed to project and workshop participants only.
- A shorter executive summary was then produced, suitable for wider circulation within ISGAN.

Participant feedback was very positive and several expressed an interest to continue to work together on the topic of public support. A follow-up public support KTP has therefore been started, with a workshop scheduled during the week of ExCo 16 in Vienna, Austria, in October 2018. The focus of the project will be to take some of the identified success factors further towards impact in the national and international funding of smart grid project and demonstrators. Some of the participants of the 2017 KTP are supporting the organizational reference group to help design this sequel KTP. Similar to the 2017 process, a detailed survey will inform a pre-workshop report, but two preparatory webinars will also be arranged for participants to make presentations on their national strategies on priority topics. This is in order to ensure an effective KTP workshop.

For more information and results of this project, see the Executive Summary: [http://www.iea-iscan.org/wp-content/uploads/2017/11/ISGAN\\_KTP\\_Public-Support-to-smart-grid-RDI\\_2017.pdf](http://www.iea-iscan.org/wp-content/uploads/2017/11/ISGAN_KTP_Public-Support-to-smart-grid-RDI_2017.pdf).

### 3.2. Country Centric Example

The Mexico KTP constituted ISGAN's pilot project to trial the knowledge transfer concept, as endorsed by ExCo 12 in Yokohama. Given the scale and pace of smart grid development in Mexico, the technical assistance work already underway with support from 21<sup>st</sup> Century Power Partnership (21CPP), and the interest shown by the Mexico Department of Energy (SENER), the KTP was timely and greatly appreciated by national partners.

The KTP was tied to the development of Mexico's roadmap for smart grids, envisaged in the newly enacted law (PRODESEN - *Programa de Desarrollo del Sistema Eléctrico*) of 2015. SENER identified the need to form a national vision for smart grids involving all relevant national stakeholders, one which could be inspired by experiences of smart grid development in other ISGAN countries.

The KTP, titled "Unleashing Smart Grids in Mexico," was delivered in August 2016 and arranged to include three interrelated parts:

1. A preparatory meeting, in which international experts were briefed about the status of smart grids in Mexico
2. An interactive knowledge exchange workshop
3. A public conference to which the wider smart grid community in Mexico was invited, including a keynote by SENER Undersecretary César Emiliano Hernández Ochoa

The ISGAN smart grid experts and practitioners, including representatives from Canada, Korea, Spain, Sweden, and the United States participated in all three parts. Mexican participants included those from SENER, the Comisión Federal de Electricidad (CFE), the Comisión Reguladora de Energía (CRE), the Centro Nacional de Control de Energía (CENACE) and the Centro Nacional de Metrología (CENAM).



**Figure 8. Mexico KTP, Mexico City, 2016.**

In this KTP, the focus was on the current needs of Mexico. Hence, the international experts and practitioners from ISGAN were there in the capacity to provide advice and support based on Mexico's specific circumstances. The international expert group was therefore provided with reading material ahead of arriving in Mexico, and also had a briefing session on the state of play of the Mexican grid modernization process with SENER prior to the in-depth discussions with their Mexican peers in the KTP workshop the following day.

For more information and results of this project, see the Executive Summary at <http://www.iea-isgan.org/executive-summary-of-smart-grid-events-in-mexico-city-17-19-august-2016/>.

### **3.3. Hybrid Approach**

ISGAN's third KTP, "Interactive Knowledge Exchange Workshop on Distributed Generation, Microgrids, and Smart Metering" was organized in partnership with India National Smart Grid Mission (NSGM), of the Ministry of Power, Government of India and the Central Power Research Institute (CPRI). Early on in the planning of the KTP, NSGM held a broad stakeholder consultation to identify and prioritize the topics for the KTP; this resulted in a project focusing on distributed generation, microgrids, and smart metering. Although the KTP was inspired by smart grid priorities in India to a large extent, the KTP organizing committee considered the topics to be of global importance. Hence, the project was designed as a "hybrid" between a country-centric and a multilateral/topical KTP, in the sense that the knowledge sharing was multidirectional (compared to the Mexico KTP, where the primary focus was to aid the development of Mexico's strategic smart grid roadmap).

The India KTP was carried out over three days in November 2017 in Bengaluru, India. This included:

- A site visit and networking day for international participants and key Indian stakeholders to the Mysuru smart grid demonstration facility
- A high-level international conference, including a keynote by Joint Secretary Dr. Arun Kumar Verma from the Ministry of Power
- An interactive KTP workshop

The workshop was designed to explore key challenges and solutions in regard to how public and private sector stakeholders can best enable smart local (historically referred to as “distribution”) grids, including active prosumers. The workshop process was designed as follows:

- Work was first completed in smaller groups to identify, define, and prioritize challenges related to the topic, taking a stakeholder perspective (“stakeholder X needs Y to solve problem Z”)
- The prioritized challenges were then the focus for international knowledge exchange discussions in smaller groups concentrating on experiences and lessons learned from the various countries represented at the workshop.
- Based on the new insights from the knowledge exchange, the participants were tasked with generating concrete ideas for solutions and actions that smart grid stakeholders could take to meet the identified challenges.

A total of 31 challenges were identified and suggestions for 62 solutions were ideated during the one-day workshop.

To encourage open and honest discussion among participants, the workshop did not involve any commercial stakeholders; only government and research actors were present. The conversations were conducted under the Chatham House Rule, meaning that no quotes were directly attributed to any specific person.

Based on the outcomes of the event, ISGAN developed two documents: a public executive summary highlighting high-level learnings and an internal document that more closely detailed the information shared, which was only provided to participants. The executive summary provides a background on the event, including the choice of theme and location; the event organizing team; and details of the site visit, public conference, and workshop.

Both formal and informal feedback suggested the three-day event was successful at enabling constructive conversation across international and Indian energy institutions on the selected theme. The events also provided a meaningful forum for exchanging best practices on identifying and implementing smart grid projects from several country perspectives, including those of the public, private, and academic sectors. A feedback form was circulated after the interactive workshop with an overall score of 4.5 on a 1-5 scale. Qualitative feedback was generally also very positive.

Presentations and the executive summary for the event can be found here: <http://www.iea-isgan.org/india-ktp-workshop/>.

### **3.4. Option for Implementation-Focused Knowledge Transfer**

Future KTPs could be organized according to the models described above (e.g., Mexico, India, Public Support). For a priority topic, where there is urgent need for international knowledge transfer and where there is a group of people working on a day-to-day basis with this topic, a more comprehensive KTP model could also be applied.



Figure 9. Figure 10. India KTP, Bangalore, 2017.

The model<sup>4</sup>, which was presented and discussed at the Annex 2 workshop in Stockholm 2015, would involve a series of 3-4 workshops with intermittent analytical work carried out over a longer period (3-6 months) by the participants. It has a comparative element, inspired by benchmarking, with a strong focus on learning and implementation. In short, it follows this logic:

**1. Focus & objective** (Workshop 1)

- Explore the identified challenge and prioritize which aspects that can realistically be covered in depth during the course of the project.
- Set practical objectives for how to implement the results (for each participating organization).

**2. Self-diagnosis and identification of key questions** (Analytical homework)

- Participants analyze and gather data about their own situation and context in regard to the focus topic. The objective is to thoroughly understand one's own problem. (The KTP facilitator assists in guiding this process).
- Informed by the self-diagnosis, participants identify key questions to put to their peers.

**3. Questions & answers** (Workshop 2)

- Deep-dive dialogue structured around the questions identified in the self-diagnosis.

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<sup>4</sup> The model was developed by Swedish knowledge transfer consultancy LightSwitch. It was piloted in partnership with Stockholm County Council and three municipalities in 2015. For details on this project, see: Lindquist, H and Lökvist-Andersen A. (2017). "Interactive knowledge transfer as a tool for stimulating energy efficiency on the regional and local level: lessons-learned from a Swedish case study." In European Council for an Energy Efficient Economy – Summer Study 2017.

The paper is available here:

[https://www.eceee.org/library/conference\\_proceedings/eceee\\_Summer\\_Studies/2017/3-local-action/interactive-knowledge-transfer-as-a-tool-for-stimulating-energy-efficiency-on-the-regional-and-local-level-lessons-learned-from-a-swedish-case-study/2017/3-181-17\\_Lindquist.pdf/](https://www.eceee.org/library/conference_proceedings/eceee_Summer_Studies/2017/3-local-action/interactive-knowledge-transfer-as-a-tool-for-stimulating-energy-efficiency-on-the-regional-and-local-level-lessons-learned-from-a-swedish-case-study/2017/3-181-17_Lindquist.pdf/)



- The dialogue is carefully documented.
- 4. *Analysis of learning & start planning for implementation*** (Analytical homework)
    - Participants analyze what they learned in the Q&A workshop and connect this to the results of the self-diagnosis. (The KTP facilitator assists in guiding this process).
    - Participants identify follow-up questions to peers.
    - Each participant start to plan for how to implement the learning into their own work and context.
  - 5. *Deepened learning and feedback on implementation plans*** (Workshop 3)
    - Deep-dive dialogue is held around identified follow-up questions.
    - Presentations are delivered and feedback is sought from peers on implementation plans.
  - 6. *Implementation***
    - Each participant implements learning as appropriate.
  - 7. *(Optional) Evaluation and lessons learned from implementation*** (Workshop or online meeting)
    - Dialogue is conducted around learning from the implementation period and possible follow-up topics are identified to explore in future collaboration.

## 4. Lessons Learned and Recommendations

Judging from feedback from participants and organizing partners, the KTPs described above have been successful and have delivered real added value to the ISGAN community. However, as the approach develops, it is important to capture lessons learned in order to further refine the KTP design and work process.

**Targeted Recruitment:** To identify, invite and secure the right participants for KTPs is a laborious and time-consuming process, and one that is highly dependent upon assistance from individual Annex members to reach out to their national networks. Going forward, the recruitment process for KTPs could be further developed to become more streamlined and transparent. For instance, the new ISGAN website could be used to spread information about planned KTPs and potential participants could register their interest online. To ensure information about KTP plans reaches potential interested parties and that new ideas for possible KTPs are captured, ISGAN could also have designated KTP liaisons in each Annex.

**Extensive Preparation:** One of the key success factors for a KTP is to have well-prepared and engaged participants. Inclusion of a preparatory task ahead of a KTP workshop is an effective means for getting participants involved and ready for quality dialogue with peers. This was evident in the Public Support KTP, where participants invested time and effort into answering a thorough survey about their national context, which was then summarized into a pre-workshop report that everyone was required to read and reflect upon prior to the event. Having advanced knowledge about the context or challenges of your peers before the dialogue is very valuable. In addition, analyzing and explaining one's own situation and challenges to others also aids the learning process of individual participants.

**Collaboration with External Smart Grid Events:** In both the Mexico and India KTPs, the event package consisted of a public conference and a workshop. The end results were much appreciated by the participants, however arranging a conference on top of the core knowledge sharing activity (the interactive workshop) required considerable resources on part of the KTP organizing team. Going forward, it would be advisable to plan KTPs to coincide with other major smart grid events in order to focus the KTP organizing team's resources on the core knowledge transfer activities, e.g., interactive workshops and preparatory work, such as surveys and summary reports.

**Longer Workshop Duration:** Given the high expectations and considerable resources that goes into planning a KTP, it is a challenge to limit the interactive workshop to only one day. Feedback has suggested interest in 1,5- to 2-day workshops to allow for a deeper dive into the subject matter. Another option is to arrange preparatory online interactive webinars ahead of KTP face-to-face workshops. For instance, the sequel to the KTP Public Support project taking place during 2018, includes both a detailed survey for participants to complete as well as two preparatory webinars ahead of the interactive event.

**Selective Focus:** To have a quality dialogue resulting in concrete actions or recommendations, it is important not to have too wide a focus. Attempting to cover too much in a short time can lead to frustration amongst participants and given the interdisciplinary character of a typical KTP group, participants may have very different understanding of, and interest in the topic. In addition, having a fuzzy focus poses challenges for recruiting the right participants to the project. Going forward, it would be beneficial for future KTPs to have a narrower thematic scope.

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*One of the key success factors for a KTP is to have well-prepared and engaged participants.*

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## 5. Planning Future Efforts

There are several key steps for effectively developing a KTP.

### 5.1. Initiation Process

Based on experience with these three initial KTPs, the ISGAN team has identified important first steps for designing effective KTPs:

#### **Step 1: Identify key partners**

For the KTP to be successful, the organizing team must first identify key partners for hosting the events. It is most interesting when there is a diverse group of supporting institutions that are engaged in designing and delivering the KTPs and who can bring unique perspectives and experiences. Under the multilateral KTPs, the key partners include the group of countries with a subset of countries helping develop the concept as part of an organizing committee. With the bilateral KTPs – like those of India and Mexico – the KTPs require a strong host country that is willing to take ownership and help drive development of the knowledge exchange in such a way that it can best meet the needs of local stakeholders.

**Step 2: Determine a specific problem to be solved**

Once the key partners are determined, they should then work together to understand what are the similar and different challenges they face in terms of encouraging smart grid development.

It is also possible to start the process by identifying an important challenge, and then reach out to ISGAN to see which countries are interested to engage in a KTP on the topic. This was the case with the multilateral Public Support KTP.

**Step 3: Select a stakeholder group**

There may be additional key stakeholders who were not involved in the initial conception of a particular KTP event but who should be involved either in the design and/or implementation. In the case of the India and Mexico KTPs, both countries conducted significant internal stakeholder consultations to determine how the respective events could be structured in such a way as to provide the most value to participants and to the national priorities at large.

**Step 4: Outline the ideal impacts of a KTP**

The KTP can be most effective if the outcomes can help inform a specific decision making process. For example, in Mexico, the KTP was used to develop a smart grid strategy, in coordination with support from the Clean Energy Ministerial's 21st Century Power Partnership.

**Step 5: Design the KTP and Develop a Workplan**

The KTP must be carefully designed to meet the needs of the target audience and challenge. If the KTP is to be co-hosted alongside another event, the two efforts must be coordinated. A workplan should be developed so that the organizing committee has a clear understanding of their roles and responsibilities in developing the KTP, the expectations in terms of the level of effort, and the timeframe for delivery.

**Step 6: Implement the KTP**

Implementation of the KTP requires close coordination among the organizing team and clear delineation of roles and responsibilities. A preparatory meeting the day before the event is recommended for tying up any loose ends and to go through the practical details on site.

**Step 7: Capture and share learnings**

For all KTPs, workshop reports are developed with internal versions to be shared with participants and executive summaries that can be disseminated more broadly. For the Mexico KTP, many of the key recommendations were included with a Mexico smart grid strategy report commissioned by SENER. For India, the key learnings have been exchanged more broadly through a public webinar presentation.

Of course these steps are fluid. The actual process for developing a KTP will reflect the priorities and approaches of a particular organizing team.

## 5.2. Forward Looking Strategy

The KTP team is actively working to identify new partners for knowledge exchange projects and seeks ISGAN's support in doing so. The KTP could also be strengthened by identifying

additional support opportunities, such as through other funding partners or through additional funding from partner countries.

An idea for future development could be to enable other CEM initiatives to benefit from the KTP model in their work by developing generic templates and guidelines for different types of KTPs. Another possibility to generate new ideas for future KTPs in a more bottom-up manner could be to develop a dedicated area on the ISGAN website, through which interested parties could register interest to learn from others and share own knowledge on specific topics (a matchmaking site for knowledge transfer in smart grids).

There is significant opportunity to utilize the KTPs to identify new areas that ISGAN could address through development of case books, other reports, webinars, tools, etc. The KTPs can also be used to inform ongoing activities, such as policy synthesis reports and learning modules to be delivered through the ISGAN Academy. Together with the broader ISGAN community, the KTP organizing team can determine ways to enhance collaboration using the KTP as a tool and to ensure that relevant learnings are widely distributed throughout the network. The KTP could also be a means of collaboration with other initiatives, such as the 21st Century Power Partnership and Mission Innovation.

## 6. Conclusions

The Knowledge Transfer Project has proven to be an effective method to enforce sharing of experiences and lessons learned within the international ISGAN community. Going forward, we believe there should be many suitable applications for knowledge sharing of relevance to leverage implementation of smart grid solutions for the clean energy transition.



**Magnus Olofsson**  
Svenska Energiinstitutet  
(Swedish Energy Institute)



**Helena Lindquist**  
LightSwitch



**Bethany Speer**  
National Renewable Energy  
Laboratory

Figure 11. ISGAN KTP core organizing team.