ISGAN
International Smart Grid Action Network

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Operating Agent
ISGAN

ISGAN in a Nutshell

ISGAN is the short name for the *International Energy Agency* (IEA) *Technology Collaboration Programme* (TCP) for a Co-operative Programme on Smart Grids (ISGAN – *International Smart Grids Action Network*).

It is also an initiative of the *Clean Energy Ministerial* (CEM) and was formally established at CEM2 in Abu Dhabi, in 2011 as an Implementing Agreement under a framework of the *International Energy Agency* (IEA).

The *International Smart Grid Action Network* (ISGAN) creates a strategic platform to support high-level government attention and action for the accelerated development and deployment of smarter, cleaner electricity grids around the world.

ISGAN in a Nutshell

ISGAN currently consists of 27 Contracting Parties.
Their nominated representatives form the Executive Committee headed by the Presidium, assisted by two co-Secretariats and the Operating Agent of ISGAN.

The work of ISGAN is divided into 6 active Working Groups (WG)

Co Secretariat & Operating Agent

AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

ISGAN Presidium

ISGAN Executive Committee

Co Secretariat

KSGI Korea Smart Grid Institute

Vision

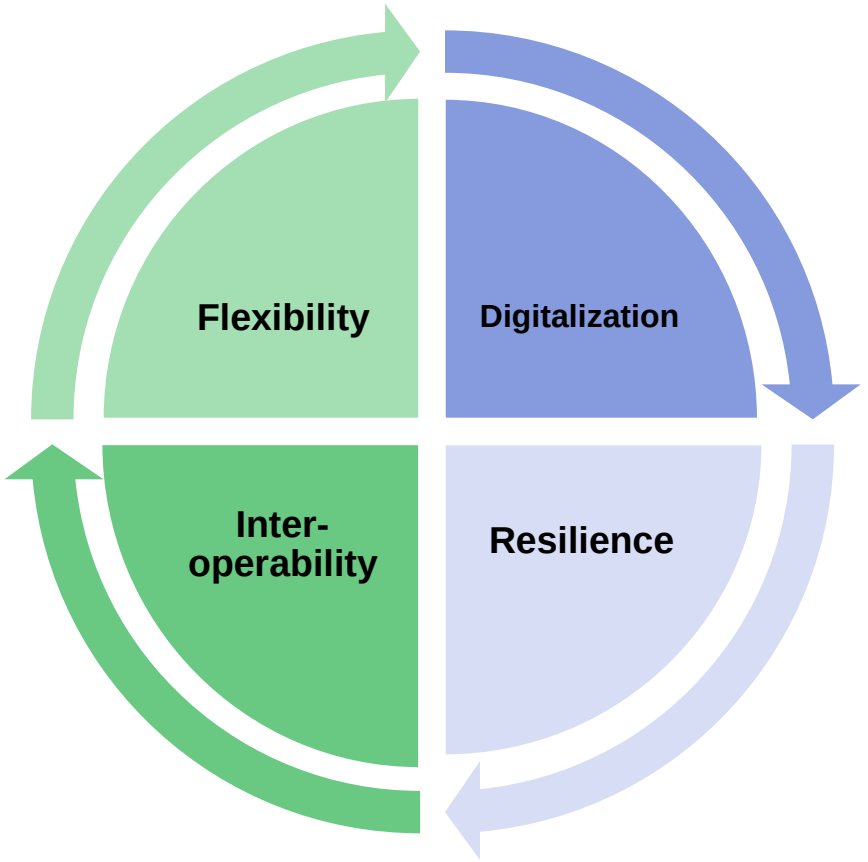
ISGAN's vision is to accelerate progress on key aspects of smart grid policy, technology, and investment through voluntary participation by governments and their designees in specific projects and programs. Its activities center foremost on those aspects of the smart grid where governments have regulatory authority, expertise, convening power, or other leverage, focusing on five principal areas:

- Policy standards and regulation
- Finance and business models
- Technology system development
- Workforce skills and knowledge
- Users and consumers engagement

ISGAN facilitates dynamic knowledge sharing, technical assistance, peer review and, where appropriate, project coordination among its Contracting Parties.

Strategy

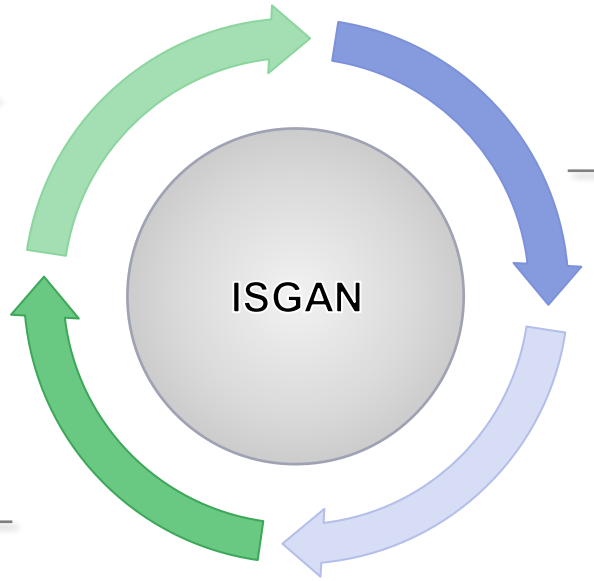
The following key-themes for ISGAN were defined, all our work focuses on these four topics:



Value proposition

Strategic partnerships
IEA, CEM, GSGF,
Mission Innovation, etc.

Broad international
expert network



Global, regional &
national policy support

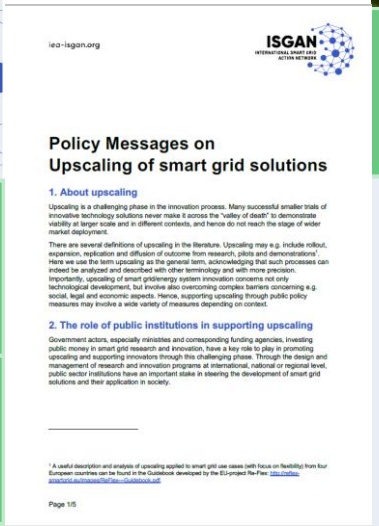
Knowledge sharing,
technical assistance,
project coordination

Value proposition

Casebooks

Webinars

Discussion papers



Technology briefs

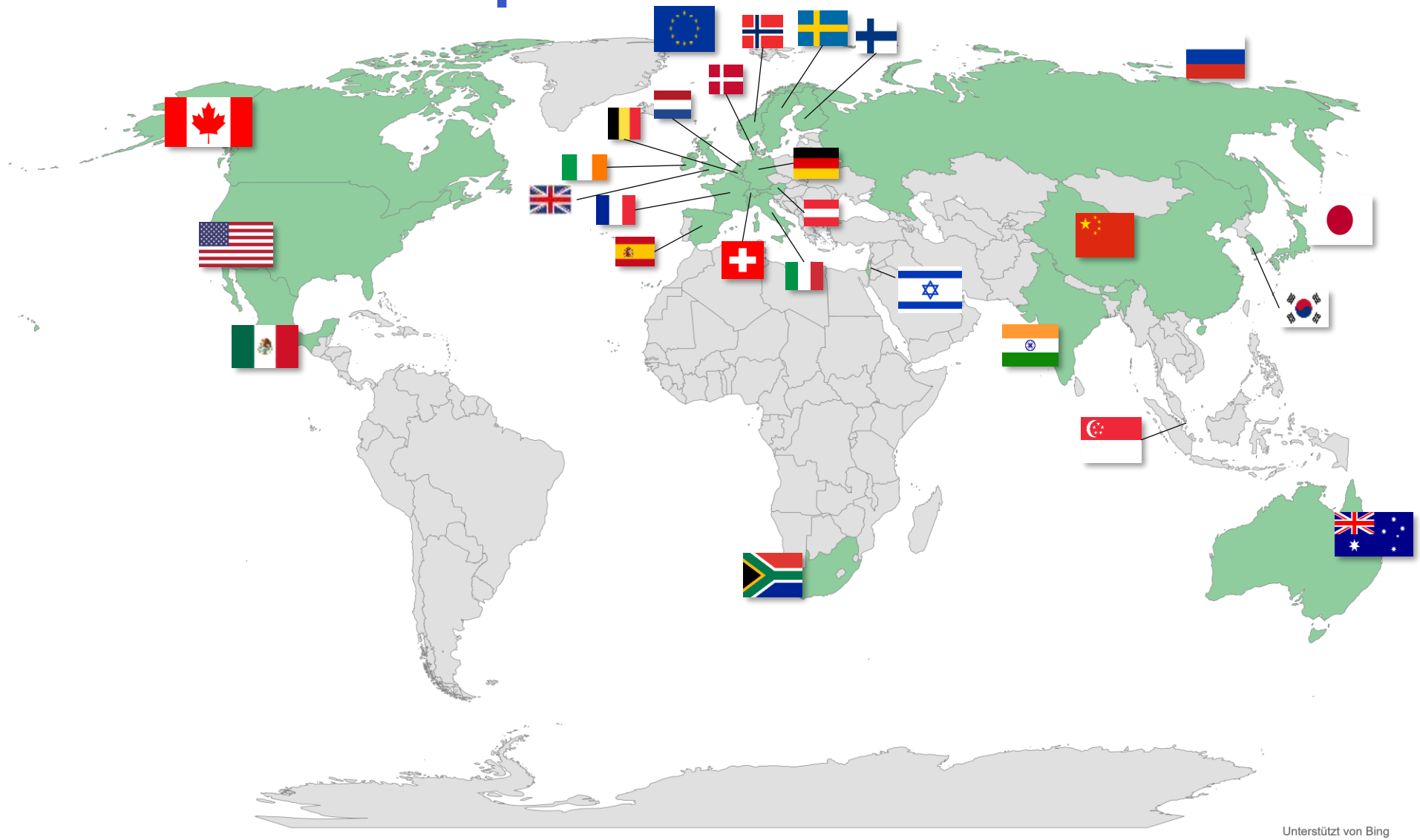
Policy briefs

Conference presentations

Workshops

Technical papers

ISGAN Membership



ISGAN Executive Committee

The ExCo is a **decision-making body** of the ISGAN All members are nominated by the ISGAN Contracting Parties.

The ExCo sets the ISGAN annual **strategy and objectives** and takes **operational decisions.**

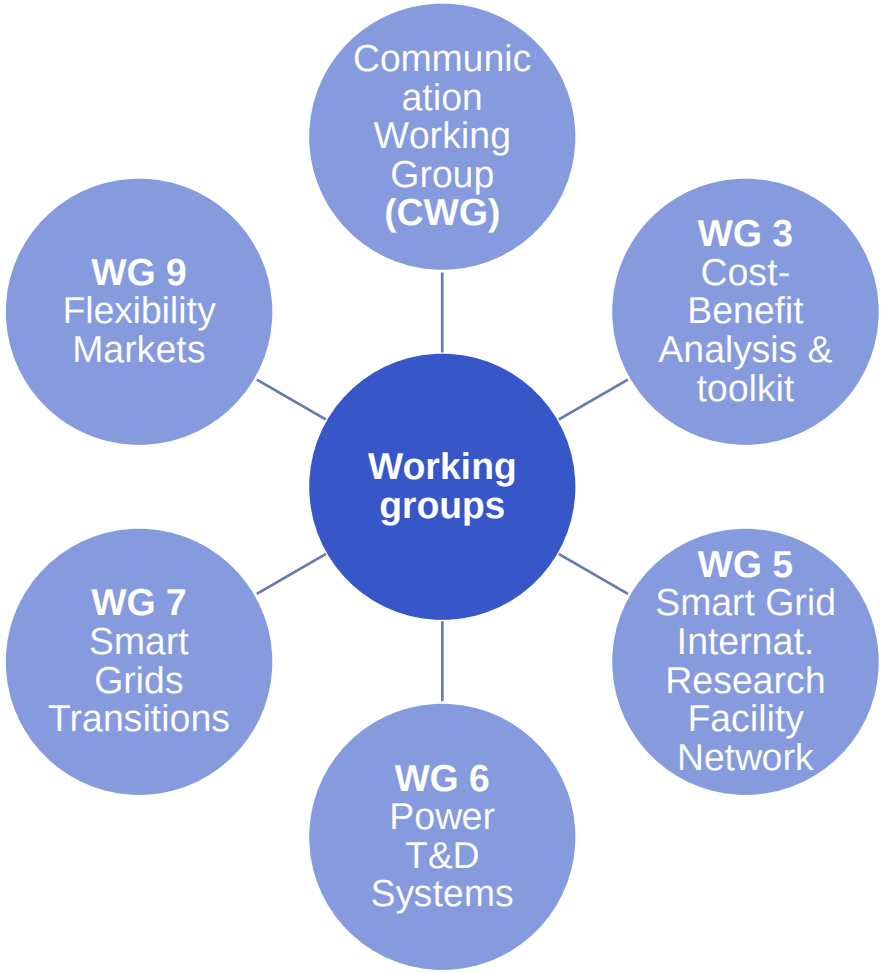
The ExCo is also responsible for setting-up and disbanding of Working Groups (working groups), **approval of their working scope and reports**; appointment of Working Group Operating Agent and Lead.
As the need arises, it may also set up ad hoc working groups for specific matters.

Our work

The activities of ISGAN are organized into six Working Groups.

The Working Groups are standing working groups continuously dealing with certain topics and updating their plans and objectives for the upcoming year at spring ExCo meetings.

The Communication Working Group brings all tasks concerning communication and dissemination of ISGAN results together.



Partnerships

- ISGAN's current partners include:
  - International Energy Agency
  - Clean Energy Ministerial
  - Global Smart Grid Federation
  - 21st Century Power Partnership
  - Clean Energy Solutions Center
  - Mission Innovation Power Mission

Communication Working Group – CWG

- Synthesis of findings for stakeholders (Policy Messages)
- National priorities and best practices (Survey of drivers and priorities, Case-books, Events)
- Structured knowledge exchange (KTP Projects)
- Virtual learning (Webinars)
- Outreach and liaison functions (other IEA organizations and CEM initiatives)
- Public media (Website and Social Media content, Press releases)

Working Group 3 – Cost Benefits

- Working Group 3 deals with methods aimed at guiding stakeholders' investment decisions related to Smart Grid technologies by considering economic and social welfare aspects.

Scope:

- development of tools for analysts, regulators, utilities and other actors
- define system needs and decide on priorities for Smart Grid system investments along with necessary regulatory changes

WG Manager

Working Group 3 – Cost Benefits

- **Updating, maintenance and promotion of the ISGAN MCA platform**

- **Distribution development when flexibility competes with grids**
  - Review and literature analysis
  - Regulation analysis (France, UK, Italy, Spain, Portugal, etc.)
  - Flexibility Market and TSO/DSO coordination
  - Planning process design (starting from relevant cases)
  - Policy brief on a suitable

WG Manager

Working Group 5 – SIRFN Testing Labs

- Research and testing facilities, test beds, testing projects: identification of collaboration opportunities among test facilities, state of the art testing practices, identification of testing protocols needing attention
- Strong and active community of researchers engaging in applied research
  and impactful work on Smart Grids testing: DER, power systems, microgrids, protocols for advanced inverter functions for PV and storage integration etc.
- Smart Grid Modelling: Server and interfaces to use these systems and topologies. SunSpec Alliance System Validation Platform, to reduce barriers to testing in emerging / developing economies
- Open source software tools, test cases and procedures to be used by DER vendors, universities, research institutions, certification laboratories, standards organizations, etc.

Lead WG Manager

Working Group 5 – SIRFN Testing Labs

- Provides a Research Infrastructure Database including Consultancy& Testing Requests distribution among participants
  - Enhancement of DER Certification Testbeds and provision of open-source testing scripts
  - Two journal papers published on IEEE 1547.1 ride through and interoperability tests.
- Power System testing:
  - Collection of testbeds and test systems for cyber-physical power system testing
- Knowledge exchange sessions on Microgrids testing
  - “Microgridtesting with the IEEE 2030.8” standard –Technalia, Spain
  - “Development of a MicrogridController for Black Start Procedure and Islanding Operation”, Fraunhofer IEE, Germany.
  - “Heuristic Optimization for Resilient (Multi) MicrogridScheduling”, AIT, Austria.
  - “Harmonic Stability of Inverters in Distribution Systems”, UCD, Ireland.
  - Grid-Forming Converter-based Virtual Inertia Control of a MG, KERI, Korea.

Lead WG Manager

Working Group 6 – Power Systems

- Facilitate the application of advanced technologies needed for power grids to contribute in the best way to the attainment of clean energy, climate goals and sustainable energy access to all
- Solutions that enable power grids to maintain and improve the security, reliability and quality of electric power supply while facing challenges related to significant trends in the electricity sector
- Condense to conclusions and recommendations for policy makers: case books, discussion papers, workshops and collaboration with other initiatives

WG Manager

Working Group 6 – Power Systems

- System operation and security
  - Discussion paper on Interoperability of digital (ICT) systems in energy sector published
  - report on Flexibility for resilience (cooperation between annex 6 and ETIP-SNET)
- Lessons learned from international projects on TSO-DSO interaction
  - Video and a Case-book published

WG Manager

Working Group 7 – Transitions

- Governance and socio-technical issues associated with smart grids deployment
- Preparation of a prototype of a smart grids foresight process to help policy makers to orchestrate a sustainable transition
- Evaluation of processes of market, forming, actor involvement and integration
- LinkedIn discussion group entitled “Smart Grid Transition”

WG Manager

Working Group 7 – Transitions

- Regulatory Sandboxes 2.0 project:
  - 3 KTP workshops with participants from ministries, funding agencies, regulatory authorities, academia and research from 15 countries
  - Policy Brief for CEM12: https://www.cleanenergyministerial.org/publications-clean-energy-ministerial/isgan-regulatory-sandbox-20-policy-messages-cem
  - Side event at CEM12: https://www.cleanenergyministerial.org/events-cem/12th-clean-energy-ministerial-cem12
  - Updated Casebook including regulatory sandbox programmes from 10 countries (AT, BE, CA, DK, FR, IL, IT, NO, SE, UK)

WG Manager

Working Group 9: Flexibility Markets- development and implementation

- To enrich and disseminate participant's understanding of flexibility market design
- To create and curate an evidence base all can draw upon to support decision making in the flexibility market space
- To further the debate on best practice in market design

WG Manager

Working Group 9: Flexibility Markets- development and implementation

- Flexibility Characteristics
- Consumer focused flexibility
- Interoperable Markets
- Flexibility for Power system planning

WG Manager

ISGAN Award of Excellence (AoE)

Since 2014 ISGAN, in partnership with the Global Smart Grid Federation (GSGF), recognizes and showcases leadership and innovation through an annual **ISGAN Award of Excellence** competition

The international jury panel recognizes excellence in innovation, integration, and transformation of smart grid systems, by selecting winning projects based on their potential impact, economic rationale, potential for replication or adaptation, innovation and other benefits.

Joining ISGAN (Option A)

If your country **is a member of the IEA** or **is currently participating** in an **IEA Implementing Agreement**, take these three steps to join ISGAN:

Step 1: Talk to Us	**Your country expresses interest in joining ISGAN by contacting the Secretariat or the Chair.**
Step 2: Meet with Us	Your country attends Executive Committee (ExCo) meetings and Working Group workshops as an Observer.
Step 3: Write to Us	If your country is interested in joining ISGAN, your country sends a letter to the IEA Executive Director identifying the contracting party, who will sign the Implementing Agreement, the Executive Committee member from that country, and the Working Group or Working Groups that your country will participate in.

Joining ISGAN (Option B)

If your country **is not a member country of the IEA** or **is not participating** in an **IEA Implementing Agreement**, take these three steps to join ISGAN:

Step 1: Talk to Us

Your country expresses interest in joining ISGAN by contacting the Secretariat or the Chair.

ISGAN ExCo will forward your country's expression of interest in joining ISGAN to the IEA CERT for consideration and approval.

Once that approval has been received, ISGAN ExCo will vote to invite your country to join ISGAN.

Step 2: Meet with Us

Your country attends ExCo meetings and Working Group workshops as an Observer.

Step 3: Write to Us

If your country is interested in joining ISGAN, your country sends a letter to the IEA Executive Director identifying the contracting party, who will sign the Implementing Agreement, the ExCo member from that country, and the Working Group or Working Groups that your country will participate in.

For more information

ISGAN Website: www.iea-isgan.org

ISGAN Chair, Luciano Martini: Luciano.Martini@rse-web.it

ISGAN Operating Agent, Dr. Mihai Calin: oa@iea-isgan.org

Clean Energy Ministerial: www.cleanenergyministerial.org

IEA Energy Technology Network: https://www.iea.org/tcp/

Thank you

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