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Joint PSF-ISGAN Side-event

What's next for power system flexibility?

Linking priorities in research and policy-making

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Content

Looking back on three years of the PSF Campaign

Recent key accomplishments from ISGAN and next term

The way forward for collaboration on flexibility through CEM

Looking back on the Power System Flexibility Campaign

Overview of the PSF Campaign

3rd phase of the campaign
3 main pillars of analysis:

Market Design	Digitalisation	Sector coupling

Two main events:

- Strategies for digitalisation, co-organised with 3DEN
- Role of hydrogen and synthetic fuels in power system flexibility

Members of the PSF Network

Strength in public-private partnership

Co-leads

Members

Non-government members

What's next for power system flexibility

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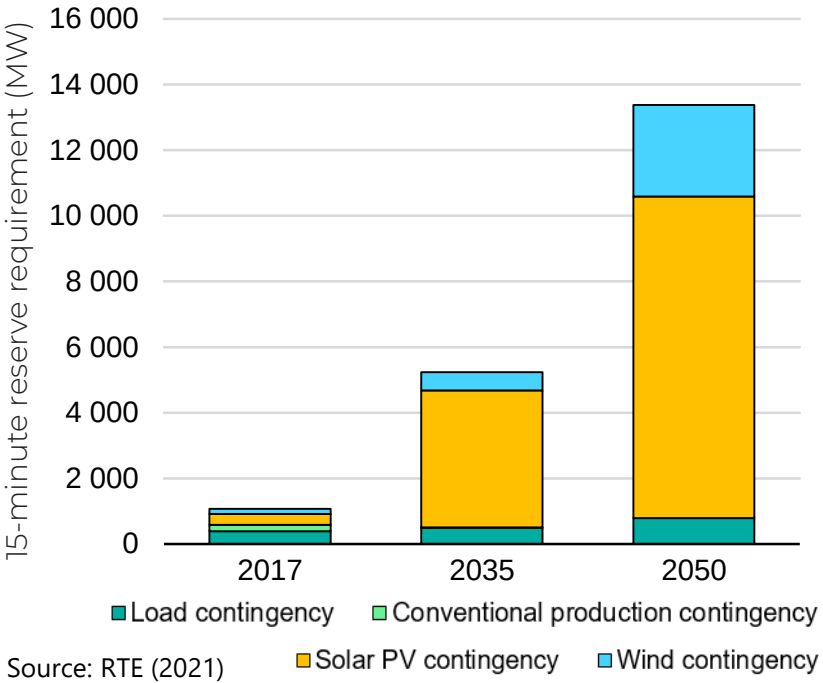
Typical and expected 15-min reserve requirements at midday in March 2020, 2035 and 2050 in France

With current and updated monitoring and estimation



Source: RTE (2021)

The drive to net-zero will drive flexibility needs in the coming decades

Addressing these needs will require a multi-pronged approach:

- Updating market and operational practices to mitigate overall increase

- Readiness and deployment of new technologies is key for the coming years

- Digitalisation and resilience will be key to accelerate progress

-While short-term flexibility is well understood, long-term is still an open question

Recent key accomplishments from ISGAN and next term

Worldwide Presence

ISGAN
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27 ISGAN ExCo Members

16 members from G20

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Examples of Recent Accomplishments

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- Developed a web-based **smart grid evaluation toolkit** using a combination of CBA and multi-criteria analysis (Annex 3)
- Organized Knowledge Transfer Projects (KTP) on **Experimental Sandboxes** for Smart Grids and published a related Casebook (Annex 2,4 and 7)
- Released key insights and policy messages on **EV & Power System Integration** in cooperation with the CEM work streams 21CPP, EVI and PSF Campaign (Annex 2)
- Released lessons learned from international projects on **TSO-DSO interaction**: video and Casebook based on inputs from several ongoing and finalized projects (Annex 6)
- Organized a number of **webinars** attracting 1000+ attendees (Annex 8)
- Launched a **new Task** whose early research activities include Flexibility Characteristics, Interoperable markets, Consumer focused flexibility (Annex 9)

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Example

Smart grid evaluation toolkit

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ISGAN smart grid evaluation toolkit

The ISGAN smart grid evaluation toolkit is a reliable support tool for orienting the investments and the regulatory policies on smart grids:

- Provides a simple framework for project assessment
- Promotes data sharing about smart grid initiatives for improving the effectiveness of the assessment

The main aim is to:

- Develop an open structure for sharing data, point of views, and results
- Build a collaborative community for promoting smart grid development by supporting the strategic decision making of government bodies and companies

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Principal Challenges Considered in Planning ISGAN Term 3

(2022 - 2027)

- **Increasing complexity of power systems:**

  Complex systems of systems with many discrete but interconnected and mutually reliant domains and components

- **Fast growing multilateral ecosystem:**

  CEM 21st Century Power Partnership, MI Power Mission, UK's new G7/COP26 power system efforts, upcoming CEM Flexibility Initiative on Net Zero, Global Power System Transformation Consortium

- **Differentiation and return on investment from ISGAN:**

  What are <u>today's</u> clear objectives and ambitious targets (national or collective) that will differentiate ISGAN and will attract and sustain key stakeholders' attention and support?

ISGAN Request for Extension

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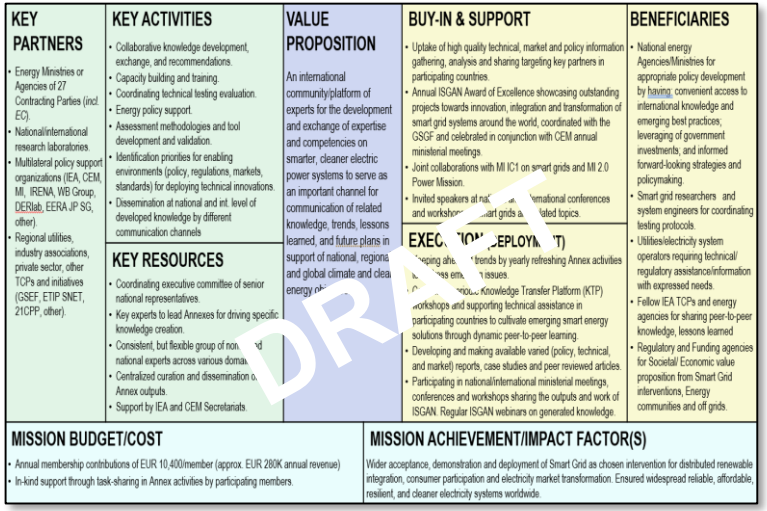
As ISGAN second term is ending in early 2022, a Request for Extension (RfE) Team was established to apply for a third term (2022 - 2027)

Due to the increasingly crowded multilateral ecosystem of Smart Grids related initiatives ISGAN underwent a deep revision process with Annexes Self Assessments and RfE Team meetings leading to the **ISGAN 3.0 strategy**

An ISGAN Value Proposition mission model canvas was also built with the help of Canada

ISGAN Value Proposition:
DRAFT *"Mission Model Canvas"*



KEY PARTNERS
- Energy Ministries or Agencies of 27 Contracting Parties (incl. EC).
- National/international research laboratories.
- Multilateral policy support organizations (IEA, CEM, MI, IRENA, WB Group, DERlab, EERA JP SG, other).
- Regional utilities, industry associations, private sector, other TCPs and initiatives (GSEF, ETIP SNET, 21CPP, other).

KEY ACTIVITIES
- Collaborative knowledge development, exchange, and recommendations.
- Capacity building and training.
- Coordinating technical testing evaluation.
- Energy policy support.
- Assessment methodologies and tool development and validation.
- Identification priorities for enabling environments (policy, regulations, markets, standards) for deploying technical innovations.
- Dissemination at national and int. level of developed knowledge by different communication channels

KEY RESOURCES
- Coordinating executive committee of senior national representatives.
- Key experts to lead Annexes for driving specific knowledge creation.
- Consistent, but flexible group of non- d national experts across various doma.
- Centralized curation and dissemination o. Annex outputs.
- Support by IEA and CEM Secretariats.

VALUE PROPOSITION

An international community/platform of experts for the development and exchange of expertise and competencies on smarter, cleaner electric power systems to serve as an important channel for communication of related knowledge, trends, lessons learned, and future plans in support of national, regiona and global climate and clea energy ob

BUY-IN & SUPPORT
- Uptake of high quality technical, market and policy information gathering, analysis and sharing targeting key partners in participating countries.
- Annual ISGAN Award of Excellence showcasing outstanding projects towards innovation, integration and transformation of smart grid systems around the world, coordinated with the GSGF and celebrated in conjunction with CEM annual ministerial meetings.
- Joint collaborations with MI IC1 on smart grids and MI 2.0 Power Mission.
- Invited speakers at na ternational conferences and worksho art grids a ated topics.

EXEC DEPLOY T)
- eping ahe trends by yearly refreshing Annex activities ss em issues.
- Knowledge Transfer Platform (KTP) workshops and supporting technical assistance in participating countries to cultivate emerging smart energy solutions through dynamic peer-to-peer learning.
- Developing and making available varied (policy, technical, and market) reports, case studies and peer reviewed articles.
- Participating in national/international ministerial meetings, conferences and workshops sharing the outputs and work of ISGAN. Regular ISGAN webinars on generated knowledge.

BENEFICIARIES
- National energy Agencies/Ministries for appropriate policy development by having convenient access to international knowledge and emerging best practices, leveraging of government investments, and informed forward-looking strategies and policymaking.
- Smart grid researchers and system engineers for coordinating testing protocols.
- Utilities/electricity system operators requiring technical/ regulatory assistance/information with expressed needs.
- Fellow IEA TCPs and energy agencies for sharing peer-to-peer knowledge, lessons learned
- Regulatory and Funding agencies for Societal/ Economic value proposition from Smart Grid interventions, Energy communities and off grids.

MISSION BUDGET/COST
- Annual membership contributions of EUR 10,400/member (approx. EUR 280K annual revenue)
- In-kind support through task-sharing in Annex activities by participating members.

MISSION ACHIEVEMENT/IMPACT FACTOR(S)

Wider acceptance, demonstration and deployment of Smart Grid as chosen intervention for distributed renewable integration, consumer participation and electricity market transformation. Ensured widespread reliable, affordable, resilient, and cleaner electricity systems worldwide.

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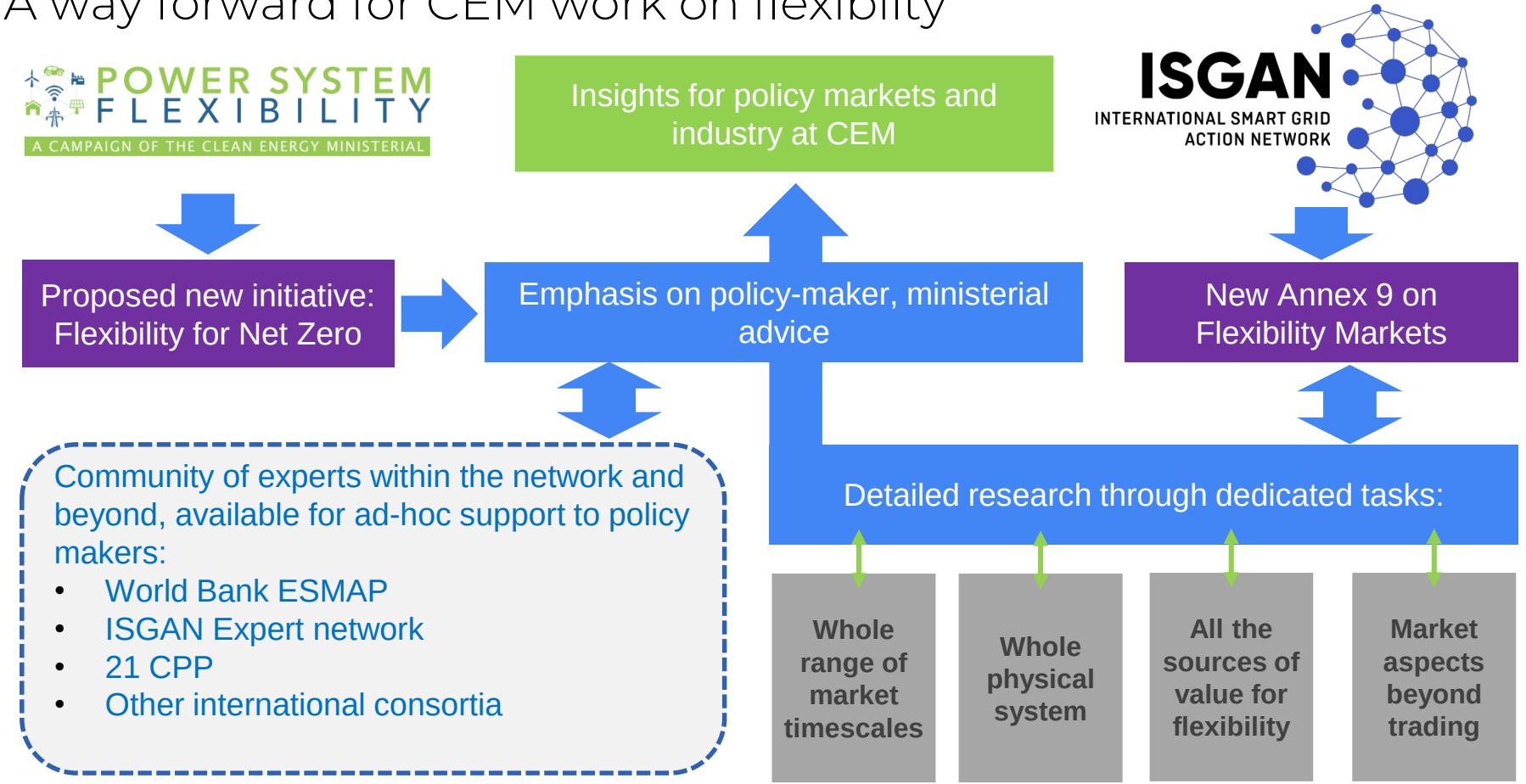
The way forward for PSF ISGAN Collaboration

A way forward for CEM work on flexibilty



Thank you

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