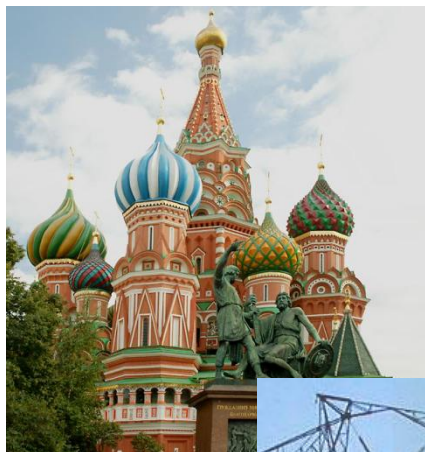




ISGAN: SMART GRIDS PERSPECTIVES FOR RUSSIA

Michele de Nigris
RSE – Italy
ISGAN Chairman

A Solution Does Not Fit All Situations

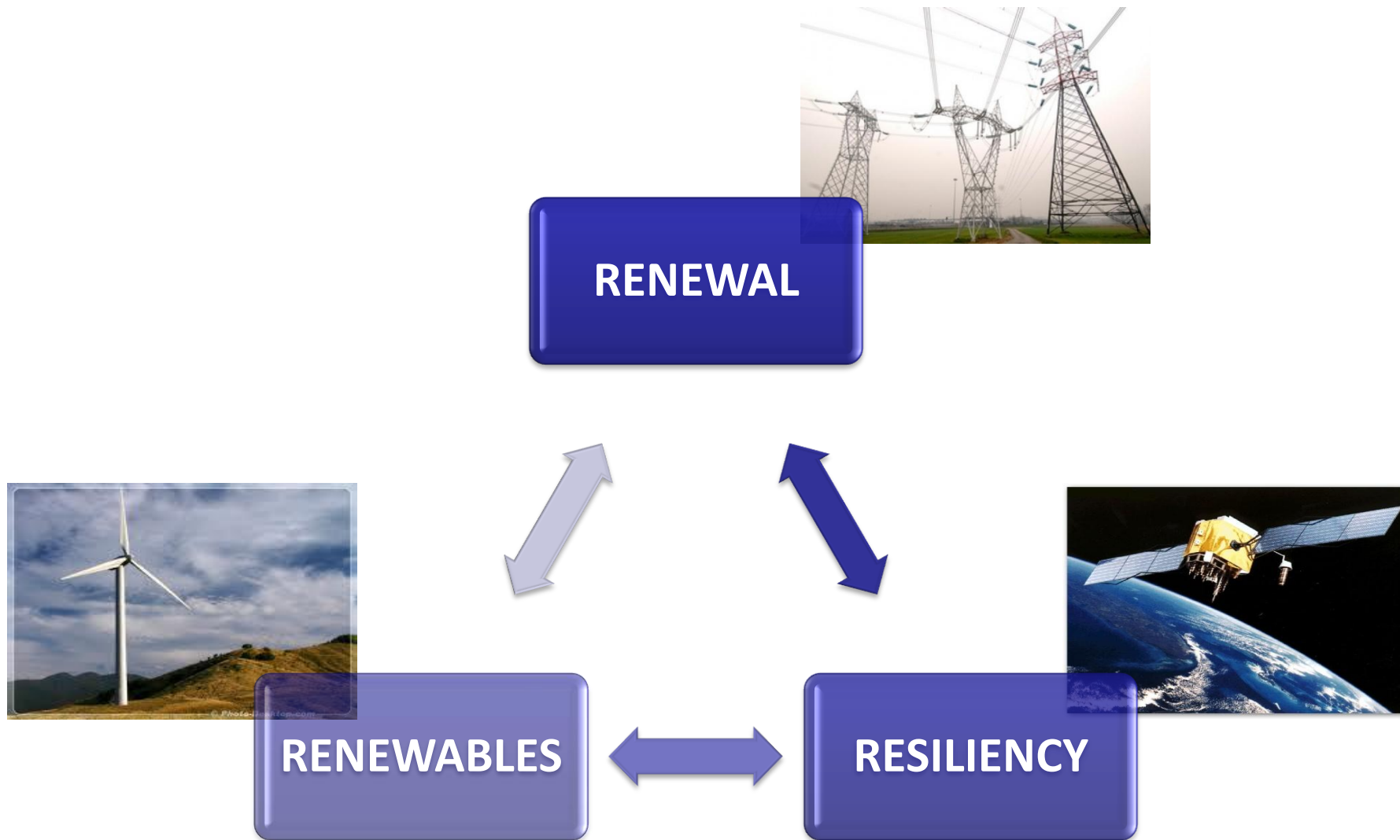
Developed Economies

- Integration of renewable energy sources in the system
- Enhancement of network capability and resilience through observability and automation
- Increase of asset utilisation and reduce system losses
- Flexibilisation of the load and demand participation for energy efficiency measures
- Leverage on economic stimulus and innovation to create green jobs

Emerging Economies

- Ensure global access to electricity, increase availability and quality
- Proactive planning of demand growth through diversification of energy mix, including RES and DG since the early developments of the system
- Prevent electricity theft – non technical losses
- Rapid and sustainable growth through design, planning and deployment of a modern electricity infrastructure (e. g. Ultra High Voltage AC/DC)

Transmission Issues



Distribution Issues



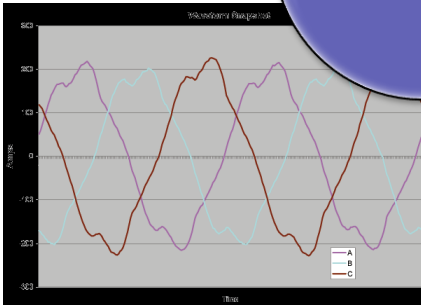
**AUTOMA
TION**

**RELIABI
TY**

**Distribution
priorities**

QUALITY

LOSSES



Smart Grids as Part of the Solution



– **Distribution automation:**

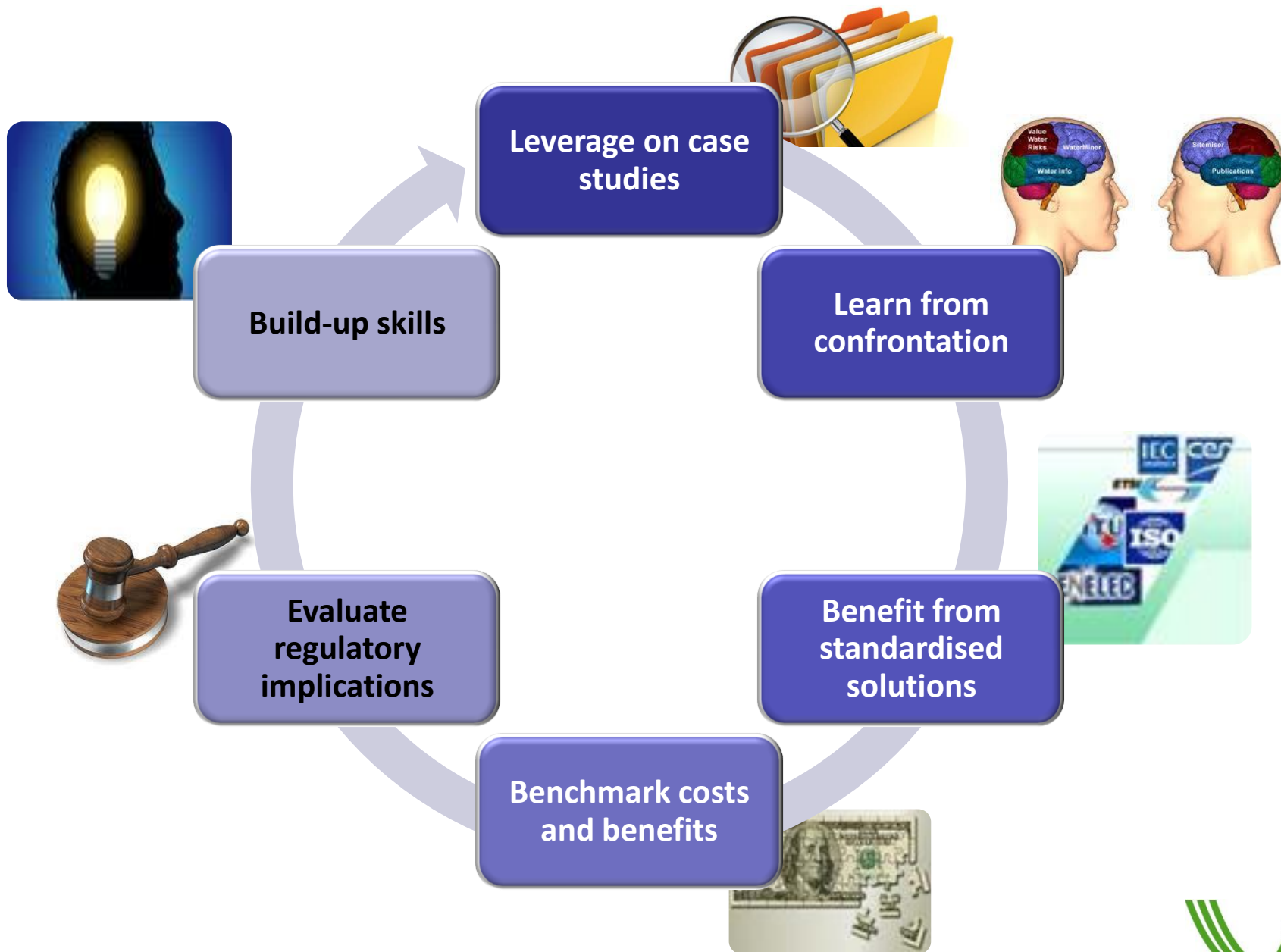
- The use of distributed intelligence (sensors) collecting data to a SCADA allows a better observability of the network
- Modernisation of the network through switching equipment operated remotely based on SCADA commands allows the reconfiguration of the network increasing its reliability
- Smart meters communicating through ICT speed-up failure prevention and correction, meter reading, customers operation, power quality check;

– **Distributed generation:**

- Reduces system losses (generation closer to consumption)
- Enhances customer participation in the electricity panorama (education);
- Paves the way to sustainable generation growth and global access to electricity

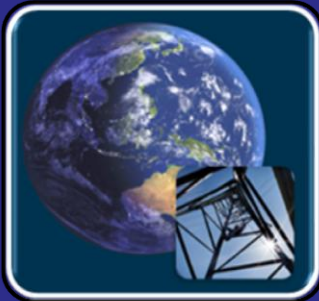


Motivations for a Global Cooperation



The Path to ISGAN

December 2009



Copenhagen (DK) – Public release of Tech. Action Plan on Smart Grids – decision in L'Aquila G8

- www.majoreconomiesforum.org
- Menu of options to accelerate deployment
- Promotes multilateral partnership on Smart Grids and ISGAN

July 2010



Washington, DC (USA) – First Clean Energy Ministerial (CEM)

- Energy Ministers from 23 Countries + EC
- Collaborate on policy and programs that accelerate the world's transition to clean energy technologies
- Goal is action – policy and program collaboration

April 2011



Abu Dhabi – Second Clean Energy Ministerial (CEM 2)

- Announces the creation of ISGAN under umbrella of IEA
- 15 countries have signed, 1 country eligible to sign (Russia), 4 more countries participate (China, Japan, Brazil, EU), requests from others (Turkey, South Africa, etc.)

International Smart Grid Action Network

Bringing high-level government attention and action to accelerate world-wide development and deployment of smarter electricity grids

ISGAN...

- Facilitates dynamic knowledge sharing, technical assistance, peer review and, where appropriate, project coordination
- Sponsors activities that accelerate smart grid deployment and address knowledge gaps
- Builds on the momentum of and knowledge created by the substantial investments being made in smarter grids globally
- Fulfills a key recommendation in the Smart Grids Tech. Action Plan
- Leverages cooperation with the International Energy Agency, Global Smart Grid Federation, and other relevant stakeholders



ISGAN Foundational Projects

1

- **“Global Smart Grid Inventory”**
of enabling programs and policies

2

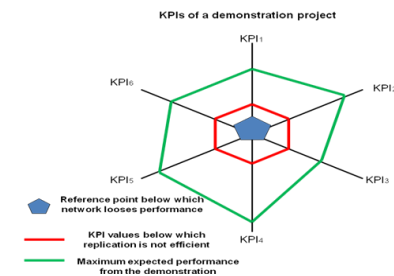
- **Smart Grid Case Studies**
using a common framework and metrics

3

- **Benefit/Cost Methodologies**
(bottom-up & top-down) and related policy toolkits to assess smart grid investments

4

- **Synthesis of Insights for High-level Decision Makers**
(e.g., CEM Ministers) from ISGAN and other related projects



Smart Grid Case Studies

Capture and communicate lessons learned from real-life demonstration and deployment projects to help stakeholders understand the true promise and challenges of deploying smarter electricity grids.

**Assess Current
Case Studies**

- ❑ Gather/assess available lessons learned
- ❑ AMI, utility EMS, substation automation, etc.

**Develop ISGAN
Case Study
Template**

- ❑ Identify common themes through workshops
- ❑ Develop template w. common structure and KPIs

**Generate ISGAN
Case Studies**

- ❑ Target selected technologies for new case studies
- ❑ Refine tools and mechanisms for sharing results

**Leverage for
Collaboration**

10 countries and the EC are participating

Cost/Benefit Methodologies

Capture and communicate actual benefits from real world smart grid investments with a clear understanding of the circumstances associated each smart grid technology deployment.

1

- **Compile Currently Available Cost/Benefit Analysis Approaches**

2

- **Evaluate the DoE Developed Computational Cost/Benefit Tool**

3

- **Compile Comprehensive Listing of Supportive and Hindering Policies and Regulations**

Other Areas of Activity by ISGAN

Smart Grid International Research Facility Network (SIRFN)

Cooperation with ASEI/ADB

Coordination with the Demand Side Management IA

Closely Tracking the NIST Interoperability Standards Development

Close Coordination with the ENARD IA
(Electricity Networks, Analysis, Research & Development)

Conclusions and Path Forward

Smart Grids: An Opportunity

- In developed countries: integration of RES, reduction power losses, increase power quality and energy security, enhance load flexibility and user participation
- In emerging economies: design and deploy flexible and resilient electricity infrastructures, ensure energy security and access to electricity
- Path forward to be decided locally (road map)

International Collaboration: A Fundamental Tool

- Most smart grids solutions are available off-the-shelf: the art of smart grids is the optimal balance and integration of technologies in the system;
- The participation to international cooperation fora (e.g. ISGAN) is an efficient means to learn from experience, exchange knowledge and bring to the international attention specific situations and priorities .



Grazie

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