Welcome

IEA TCPs Joint Workshop

Energy Efficiency in Future Electricity Systems: The Invisible Fuel

Tuesday 31st January 2017, Milano
RSE – Via Rubattino 54 – 20134
Milano - Italy

iea Energy Technology Network

IEA TCPs Joint Workshop at RSE

The TCPs

HTS

The HTS TCP aims to analyze superconductivity technology, monitor developments in industry standards, and assess the benefits and existing barriers to deployment. It brings together utilities, funding agencies, manufacturers, laboratories and trade organizations to enable significant improvements in the generation, transmission, distribution and use of electric power. A recent roadmap was developed by the TCP for the widespread integration of high-temperature superconductors into the electricity supply network and highlights. Website: http://www.ieahts.org

ISGAN

ISGAN is the International Energy Agency (IEA) Technology Collaboration Programme on Smart Grids, and an initiative of the Clean Energy Ministerial. ISGAN facilitates dynamic knowledge sharing, technical assistance, and project coordination, where appropriate. ISGAN participants report periodically on progress and projects to the Ministers of the Clean Energy Ministerial, in addition to satisfying all IEA Implementing Agreement reporting requirements. The ISGAN TCP aims to advance policy, technology and related standards for smart grids by raising awareness of their benefits, developing tools for implementation, and co-ordinating joint projects. The annual ISGAN TCP Award of Excellence has become a global mark for outstanding projects and best practices on smart grids development and deployment.
Website: http://www.iea-isgan.org

DSM

The DSM TCP focuses on strategies for modifying the demand of energy from end-users using technological solutions, regulatory or financial incentives, and other means of encouraging behavioral change. By reducing or shifting demand according to a power system's needs, investment in power generation and grid capacity can be deferred or avoided, with benefits in both fast-growing economies where much power infrastructure is yet to be built, and in established systems where ageing infrastructure needs to be replaced. Website: http://www.ieadsm.org

4E

The 4E TCP supports sound policy development in the field of energy efficiency end-use equipment by providing a forum for governments and other stakeholders to understand effective approaches to policy making. A comparison of results from 110 LED testing laboratories around the world has helped to improve the reliability of data for lighting products. Website: http://www.iea-4E.org

Traveling and lodging

A block of rooms have been reserved in the following hotels – please refer to the reservation code: ISGAN

- HOTEL GAMMA: Via Carlo Valvassori Peroni, 85, 20133 Milano – Phone: +39 02 26413152 Web Site: http://hotelgammamilano.it/en/hotel/
- HOTEL LOMBARDIA: Viale Lombardia, 74/76 - 20131 Milano Phone: +39 02 2824849 Web Site: http://hotellombardia.com/
- HOTEL NOVOTEL LINATE AEROPORTO: Via Mecenate, 121 Milano – Phone: +39 02 507261 Web Site: http://www.novotel.com/it/booking/hotels-list.shtml
- HOTEL CAVOUR: Via Fatebenefratelli, 21 20121 Milano – Phone +39 02 620001 Web Site: http://www.hotelcavour.it/en/

HOW TO REACH THE VENUE

From CENTRAL Railway Station: take Green Line Underground (direction GESSATE or COLOGNO M.), Stop at LAMBRATE FS (Railway Station) - about 10 minutes.

- Bus 39 (best before 9.00 am) to Rubattino/Redecesio from "Bottini" square
- Bus 924 (all times) Terminus behind Lambrate railway station (use the Railway underpass in Lambrate FS station

On both buses get off at stop "Rubattino n. 54" - Tangenziale Est
From Linate Airport: Taxi 10 min (max 25€)
From Malpensa Airport: Taxi 50 min (around 85€) or better:

- Train to Cadorna station and then the Green Line metro direction COLOGNO M. or GESSATE and get off at Lambrate Station
- Shuttle bus to Central Station, take the Green Line metro direction COLOGNO M. or GESSATE and get off at Lambrate Station

Interested to participate?

Please contact:

Marilena.martinelli@rse-web.it or

francesca.delarderel@rse-web.it

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Tuesday 31st January 2017, Milano
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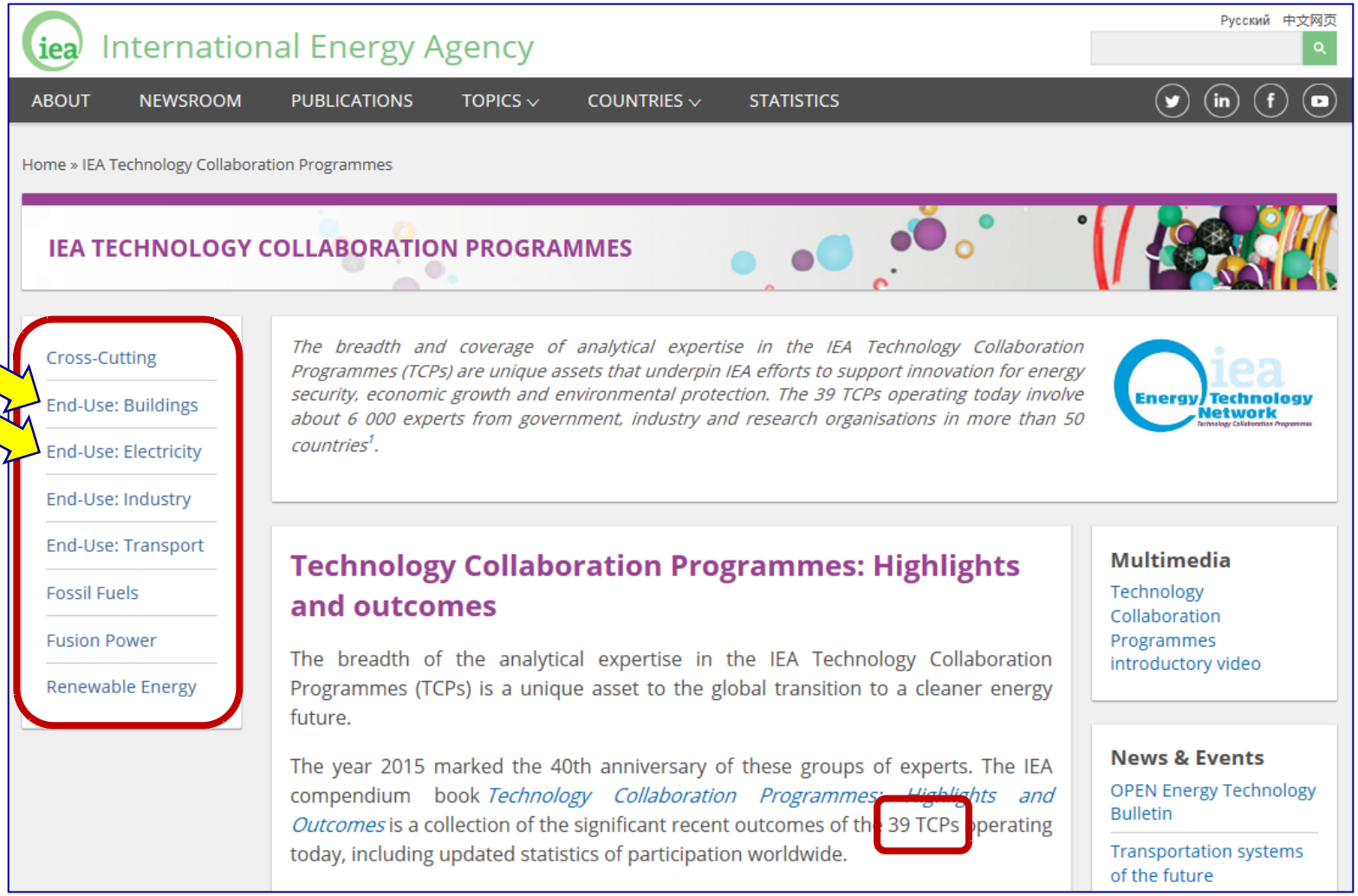
Milano - Italy
10h00 - 18h00

Joint TCPs Workshop

TUESDAY January 31st 2017

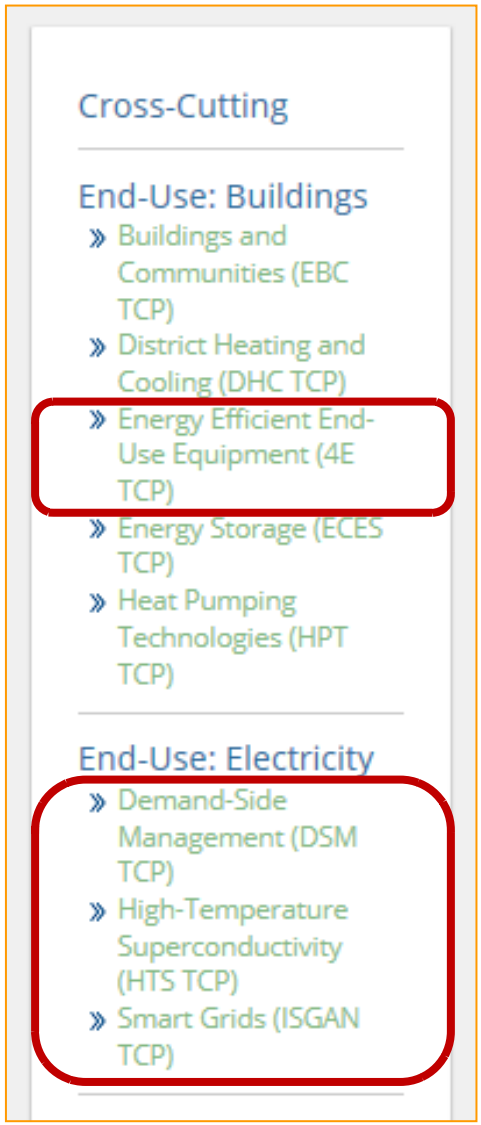
9.30 – 10.00	Registration
10.00 – 10.15	**Introduction** - **G. Maas** - Chair EUWP
10.15 – 11.00	***Introduction to the TCPs:*** • **HTS**: L. Martini - Chair • **ISGAN**: M. de Nigris - Chair • **DSM**: R. Kool - Chair • **4E**: R. Brueniger - Delegate
11.00 – 11.15	Coffee break
Session 1 11.15-12.45	***System aspects and regulation***: • ***K. Widegren*** *(ISGAN): The power grid as an enabler for an efficient utilization of renewable resources* • **R. Conklin** (SEAD): *Resources and Opportunities through the SEAD Initiative* • **S. Gross** (DSM): *Helping Behavior Changers for more effective market uptake of DSM energy services* ***Discussion***
Session 2 12.45 - 13.15	***Capacity building and outcomes***: • **H. Nilsson** (DSM): *University* • **J.P. Chaves** (ISGAN): *Academy of smart grids* • **M. Noe** (HTS): *ESAS and progress in HTS device development in Europe* ***Discussion***
13.15 - 14.15	Lunch break
Session 3: 14.15 - 15.45	***Technological development and standards***: • **B. Marchionini** (HTS): *The HTS Roadmap 2015 - 2030* • **R. Brueniger** (4E): *Energy Efficiency in 4E: Standards and Roadmaps* • **R. Conklin** (ISGAN): *Smart Grid testing work under ISGAN's SIRFN* ***Discussion***
15.45 - 16.00	Tea break
16.00 - 17.30	**Collaboration and call for action** ***Round table on possible joint activities and annexes among the 4 TCPs, outreach towards CEM — CEM8 round tables & future campaigns***
18.00	End of workshop

About the IEA Technology Collaboration Programmes



About the IEA Technology Collaboration Programmes

Technology Collaboration Programmes



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IEA Technology Collaboration Program on High-Temperature Superconductivity (IEA HTS TCP)

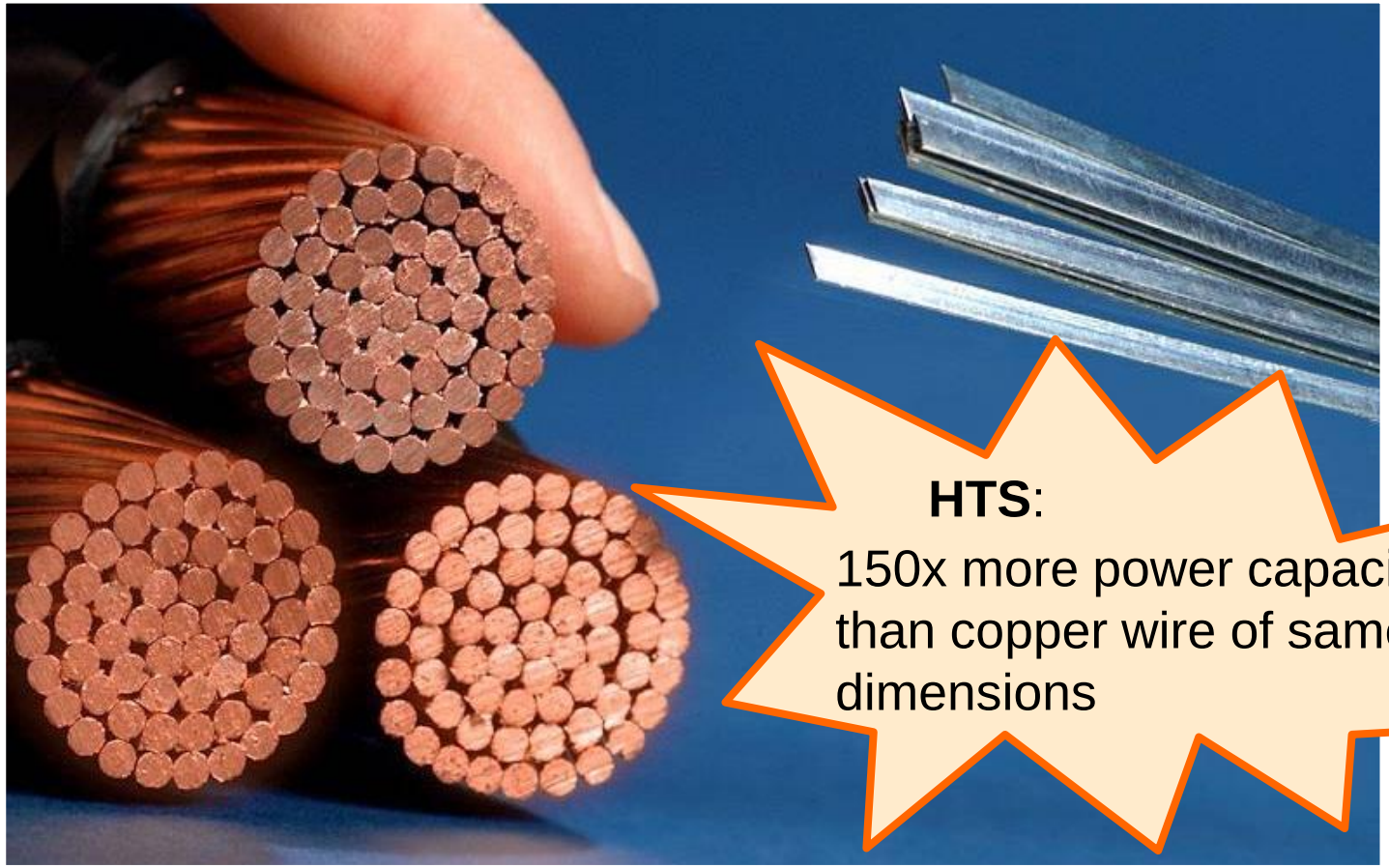
Luciano Martini
Chairman

IEA TCPs Joint Workshop

31 January 2017
Milano, Italy

www.ieahts.org

CONVENTIONAL versus **SUPERCONDUCTING**

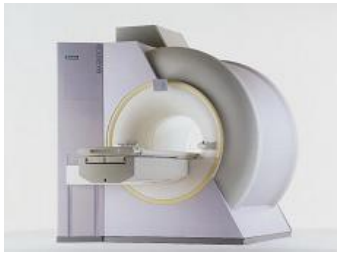


Superconductivity: Large scale Applications

Present Market

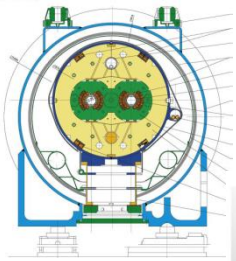
~ 5 b$/year

MRI Systems (Magnetic Resonance Imaging)

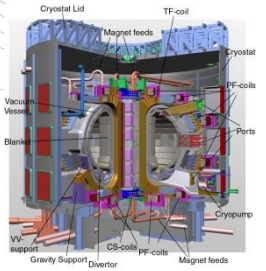


NMR Systems (Nuclear Magnetic Resonance)

Magnets for Particle Accelerators and Detectors



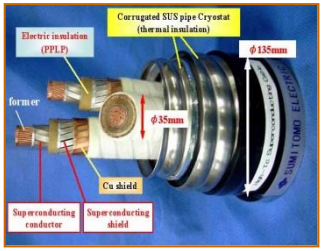
Magnets for ITER

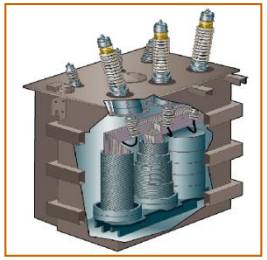


High Field Magnets

Future Market

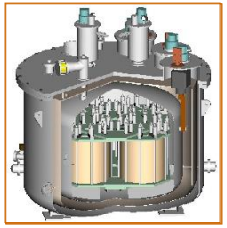
HTS Components and devices

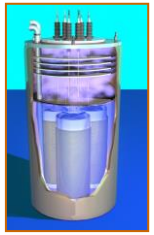




Cables **Transformers** **Motors Generators**

New Devices





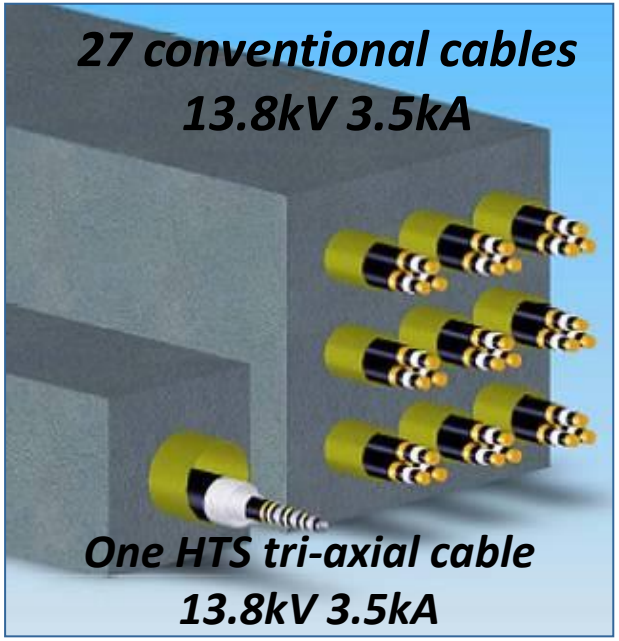
SMES **SFCL**

Superconducting Magnetic Energy Storage **Fault Current Limiter**

Why HTS for the Electric Grid?

- HTS is the most efficient electricity carrier, reducing energy losses and carbon emissions
- HTS based devices such as cables, fault current limiters (FCLs), transformers and energy storage devices are intrinsically smart, can limit overcurrents, and provide grid resilience
- HTS cables can provide up to 10 times higher capacity than conventional cables and carry transmission power at distribution voltages
- HTS cables have reduced right-of-way requirements and can be readily permitted in dense urban areas
- HTS FCLs improve system reliability when renewables and distributed generation are added to the grid

Which Role can play Superconductivity in the Power Sector ?



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About the IEA HTS Technology Collaboration Program

- Brings together government and funding Agencies representatives, researchers, equipment manufacturers and utility end-users to address common interests.
- Participants sponsor studies, workshops, exchange information, introduce their research facilities to other participants and guide the assessments.
- Participants also ask experts from their countries to provide input and to peer-review draft reports.
- Strategic documents, minutes of meetings, and workshop presentations are published on the website.

Contracting Party Information

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Hydro Quebec, Institut de recherche

Finland

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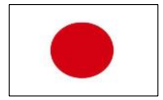
Executive Committee
RSE S.p.A
Dr. Michele de Nigris
RSE S.p.A

Japan



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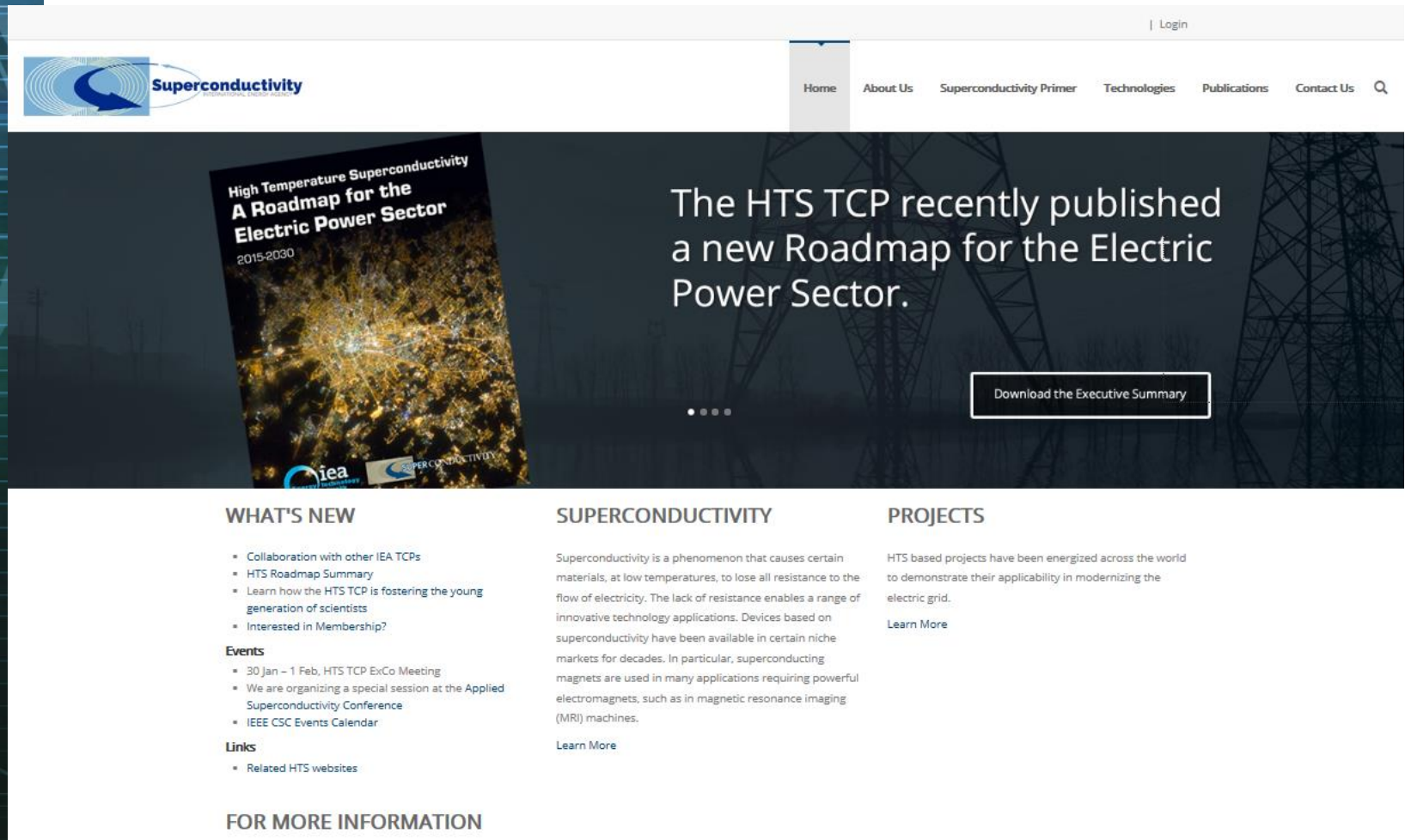
IEA Technology Collaboration Program on HTS: Main Activities

- Technical communications and outreach (e.g. Annual Report and HTS Applications Roadmap)
- Share policy and technical information among TCP participants
- Develop website content with technical and policy information
- Stay current with HTS interest groups and IEA activities
- Organize technical Workshops
- Support in promoting TCP visibility
- Coordination with other IEA groups such as ISGAN

For more information please visit: www.ieahts.org



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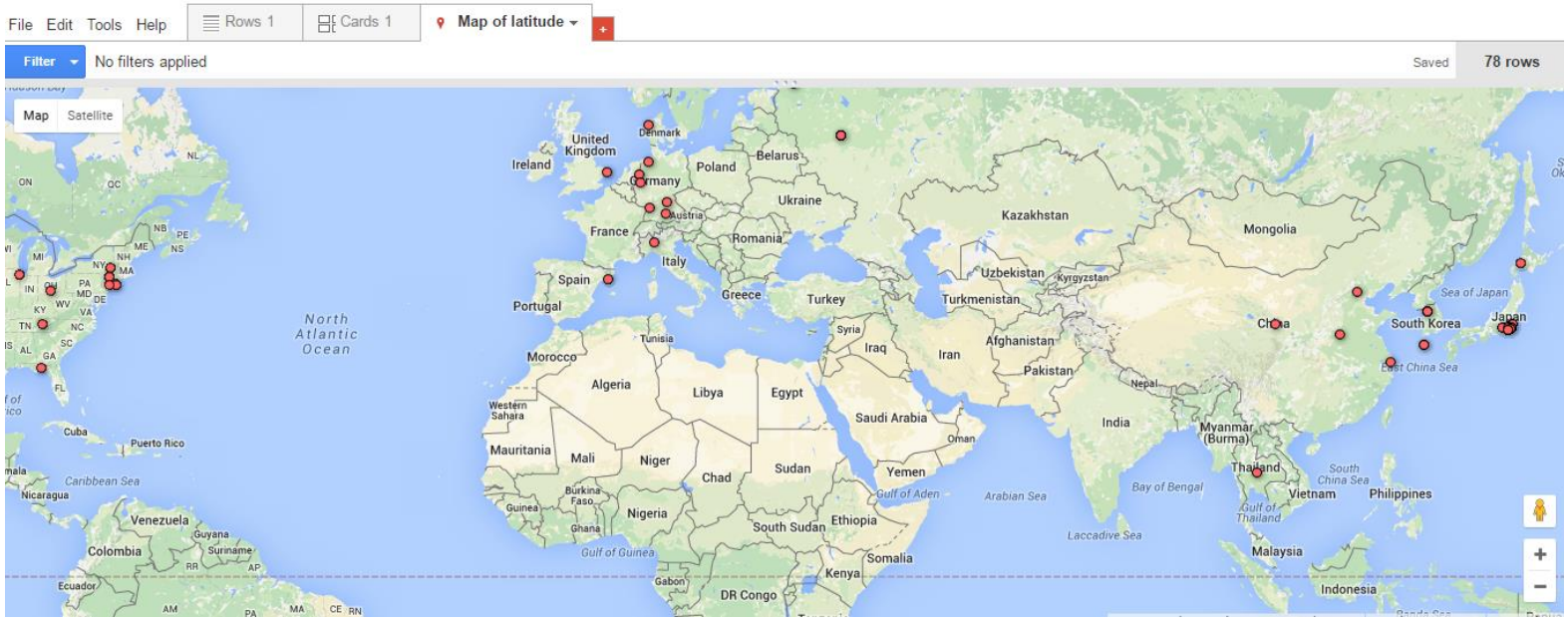
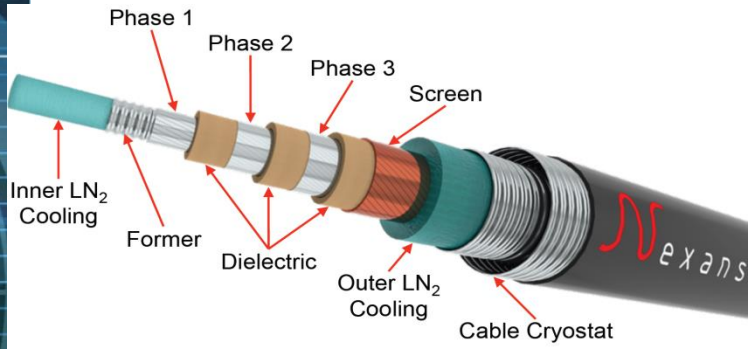
World Projects at a Glance

Technical monitoring of HTS projects:

- Covers EU, US, Korea, Japan, China, Russia
- Focus is on electric power projects
- Updated periodically



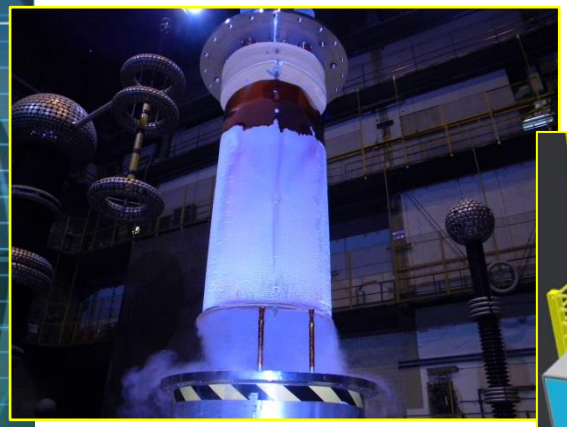
The Role of Superconductivity for Power Applications

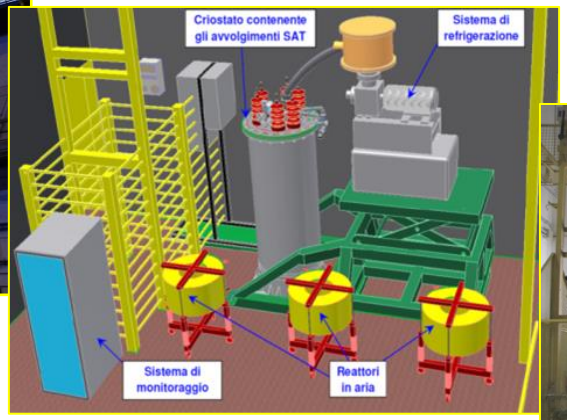


HTS Cables

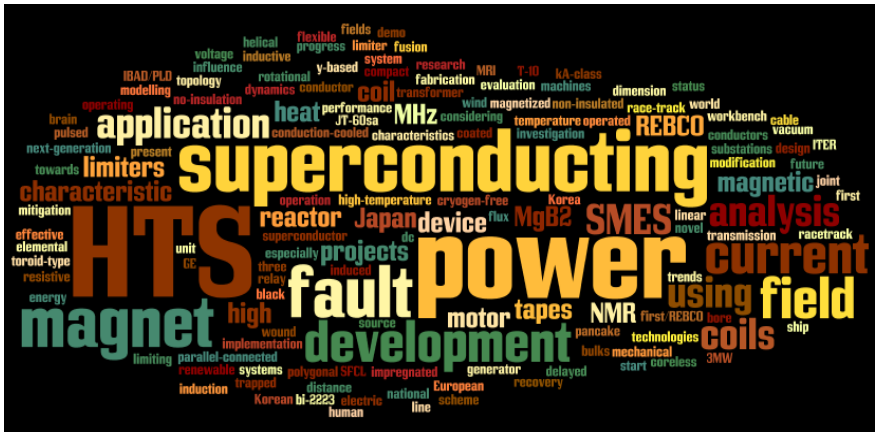
The Role of Superconductivity for Power Applications

SFCL





Thank you
for your attention



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