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Strategic Energy Technologies Plan

**European Commission,
DG Research, Energy**

Patrick Van Hove

Smart Grids Week Salzburg

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Presentation overview

SET Plan

European Electricity Grids Initiative

Initiative Implementation



EU Strategic Policy Objectives

- **Europe 2020 – smart, sustainable and inclusive growth**

- **Energy of the future:**
 - **Sustainability, Competitiveness, Security of supply**
 - **3x20% by 2020 target**
 - **80% reduction of GHG by 2050**

- **Energy research:**
 - **Increasing the research investments**
 - **FP7 (excellence in research)**
 - **SET-plan**
 - **Partnerships with the industry – platforms, PPP**



SET-Plan – the technology pillar of EU energy and climate change policy

Objective:

- **Accelerate the development of a portfolio low carbon technologies leading to their market take-up**

Main elements:

- **Broad technology development**
- **New governance - joint programming**
- **Increase in resources- financial & human**
- **Reinforced international cooperation**
- **Financing discussed in « Investing in the Development of Low Carbon Technologies »**



SET-Plan implementation

- **European Industrial Initiatives (EII)**
 - **Industry-led, public-private partnerships**
 - **Agreed roadmap, implementation plan**
 - **Focus on innovation**
 - **Open structure, voluntary participation**
 - **Light governance**

- **European Energy Research Alliance**

- **International cooperation**

- **Increase in financial and human resources**



European Industrial Initiatives

- **Six (seven!) new European Industrial Initiatives:**
 - European Wind Initiative
 - Solar Europe Initiative
 - Bio-energy Europe Initiative
 - European CO₂ capture, transport and storage initiative
 - Sustainable fission initiative (Gen IV)
 - European Electricity Grid Initiative
 - Smart Cities (new)

- **On-going initiatives:**
 - Fuel cells and hydrogen (JTI)
 - Fusion (ITER)



SET Plan: State of Play

- **Investing in low-carbon technologies:**
 - **Communication: RD&D from 3B€/yr to 8B€/yr;
Support from Commission, Council, Parliament**
- **Madrid SET Plan conference, 3-4 June 2010**
 - **4 Industrial Initiatives launched:
Solar, Wind, Electricity Grids, Carbon Capture and Storage**
 - **Joint Statement supported by the public (EC, MS)
and private side (relevant industry)**
 - **Light governance structure established,
first Implementation Plans agreed**
 - **4 Research Alliance (EERA) Joint Programmes launched:
Solar, Wind, Electricity Grids, Geothermal**



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EEGI: State of Play

➤ **European Electricity Grids Initiative RD&D Programme**

Drivers:

- **Increase in renewable electricity, large & distributed**
 - **Increase in cross-border flows**
 - **Aging infrastructure**
 - **Changing production and consumption patterns**
- ... while keeping dependability and efficiency**

Initial impetus by 7 TSO's – 7 DSO's

Transmission RD&D plan = ENTSO-E R&D Programme

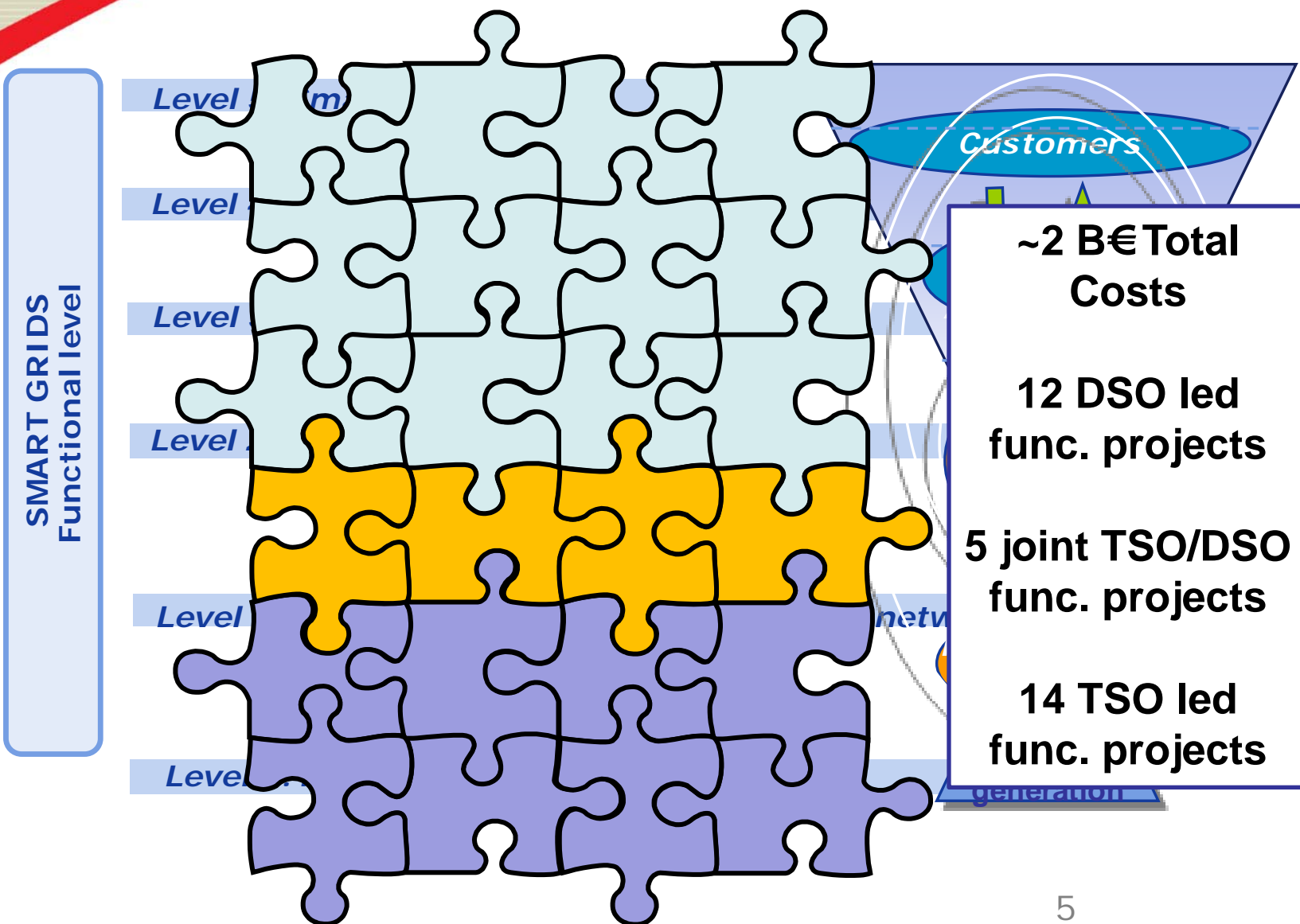
Widening support of DSO's – EDSO-SG

Review of detailed Implementation plan by other stakeholders organised by the Smartgrids Platform

Coordination with Solar, Wind initiatives, Green Car Initiative



EEGI Implementation Plan





Electricity Grids EII Expected Results - Impacts

- **Validation at scale, under representative boundary conditions of**
 - **Technical solution, particularly system integration**
 - **Business cases**
 - **Use scenarios, solutions to user engagement****... ready to be scaled up and replicated**

- **Solutions to reduce cost vs. business as usual**
- **Interoperable solutions, standardisation**
- **New efficient business processes; new interactions**
- **Contribution to smart regulation**
- **Opening up room for innovation in products and services by market players**



EEGI: A basis for cooperation

- **Cooperation among Electricity Grids stakeholders**
 - among TSO's – ENTSO-E; among DSO's – EDSO-SG
 - between TSO's and DSO's
 - With regulators – Florence meetings
 - with other stakeholders – for planning, in projects
 - with Research Alliance

- **Cooperation with other initiatives**
 - SET PLAN: Solar, Wind, Smart Cities
 - Public-Private Partnerships: Green Car, Energy-efficient Buildings
 - SETIS: KPI's, Monitoring



European Energy Research Alliance – Joint Programme on Smart Grids

- **Initiative by a number of leading research institutes (October 2008):**
- **Aim: decrease fragmentation, accelerate development of new energy technologies through Joint Programmes (JPs):**
- **Launch of 4 JPs in June 2010: PV, Smart Grids, CCS and geothermal**
- **So far 13 participating institutions:**
 - **AIT (AT), ECN (NL), ENEA (IT), ERSE (IT), IWES (DE), JRC (NL), LABEIN (ES), LABORELEC (BE), Risø (DK), SINTEF (NO), TUBITAK (TR), VITO (BE) and VTT (SF)**
- **4 Sub-Programmes for joint research:**
 - **Network operation**
 - **Energy management**
 - **Control system interoperability**
 - **Electrical storage technologies**



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SET Plan Background

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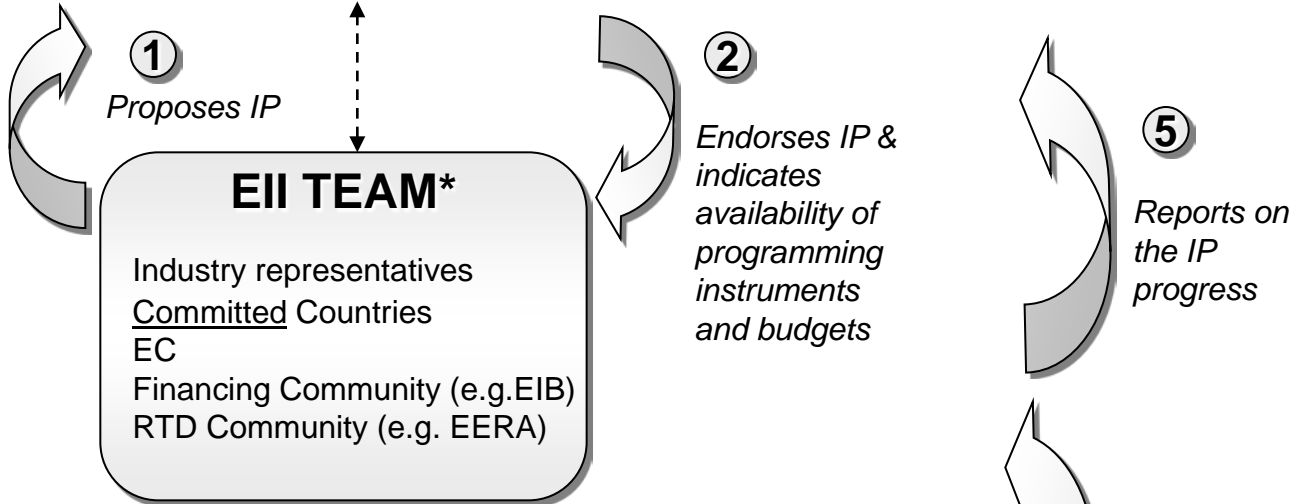


EEGI: Governing Architecture

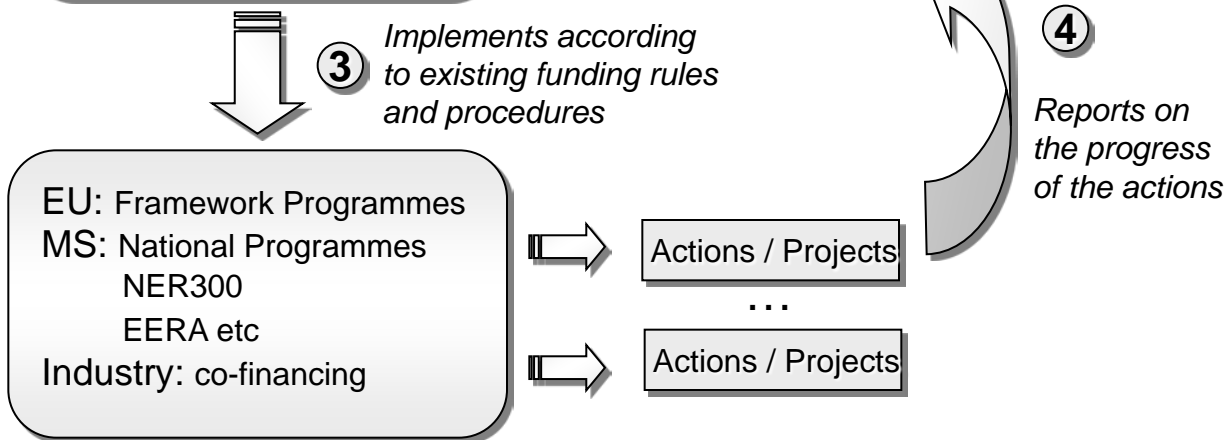
Orientation level



Planning and programming level



Implementation and operational level





EII Team Role (Planning and Programming level)

- ✓ **Develop Implementation plan, investment needs, KPI's**
- ✓ **Put into operation the implementation plan**
- ✓ **Monitor the technological progress through KPI's**
- ✓ **Address cross-cutting issues with other EII teams**
- ✓ **Report progress to the Steering Group**

First meeting 18 May 2010

- ✓ **Implementation plan approved**
- ✓ **Importance of cooperation with regulators**
- ✓ **KPI's and their links need to be further developed**

Second meeting foreseen September – October 2010



EEGI Team : Initial Composition

European Commission: Wiktor Raldow (Chair)

Representatives of Public Authorities – 18 Countries so far

- ✓ AT, BE, CH, CZ, DE, DK, ES, FI, FR, GR, IT,
LT, NO, PT, SI, SE, TR, UK

Representatives of TSO's (and ENTSO-E): 4 and alternates

- ✓ ELIA, TRANSPower, RTE, REE, ENERGINET, AMPRION,
TERNA, ENTSOE

Representatives of DSO's (and EDSO-SG): 4 and alternates

- ✓ ENEL, ERDF, IBERDROLA, ENEXIS

Representatives of "Industry" (and Platform): 4 and alternates

- ✓ T&D Europe, Digital Europe, ESMIG, EURELECTRIC



EEGI Next Steps - Financing

Incentives in Tariffs (EEGI only)

- ✓ **3rd Internal Energy Market package**

Tariff incentives may support some “grid-internal benefits”

Other sources needed to support “grid-external benefits”

European Trading Scheme – NER300 Reserve

European Energy Programme for Recovery

Energy infrastructures, Offshore wind, CCS

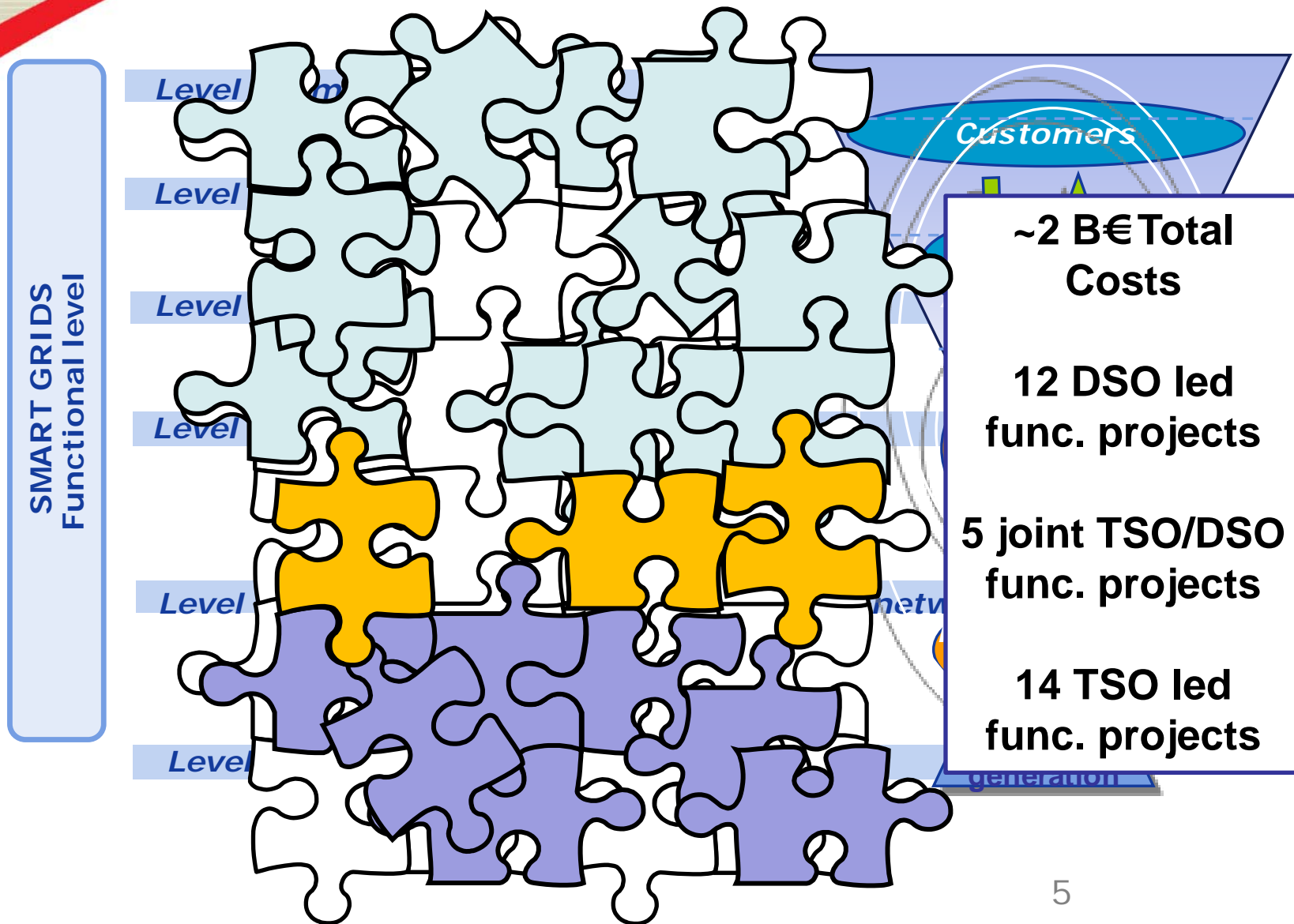
EU FP7 Cooperation – FP8?

Member States Programmes

Coordination, Reporting, Sharing of knowledge



EEGI Implementation plan





Call ENERGY-2010-1

- ✓ Energy storage for stationary applications

Call ENERGY-2010-2

- ✓ Large scale demonstration of smart distribution networks

Work Programme 2011: preliminary thoughts

- ✓ Pan-European transmission networks: coordinated control, security
- ✓ Demonstration of large-scale innovative storage
- ✓ Network of smart grids demonstrations

Information day 8 July 2010

- ✓ [EC/research/conferences/2010/energy_infoday](http://ec/research/conferences/2010/energy_infoday)



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Thank you for your attention

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