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The Implications of the EU Strategic Energy Technology Plan for Energy Research in a Member State

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Questions addressed in my presentation

- » What is the SET-Plan (all about)?
- » How is it structured
- » How does it work in practice?/first experiences
- » What are its consequences for energy R&D in the EU?
- » What are the challenges for R&D institutes in MS?
- » The additional challenges for Belgium and Flanders!

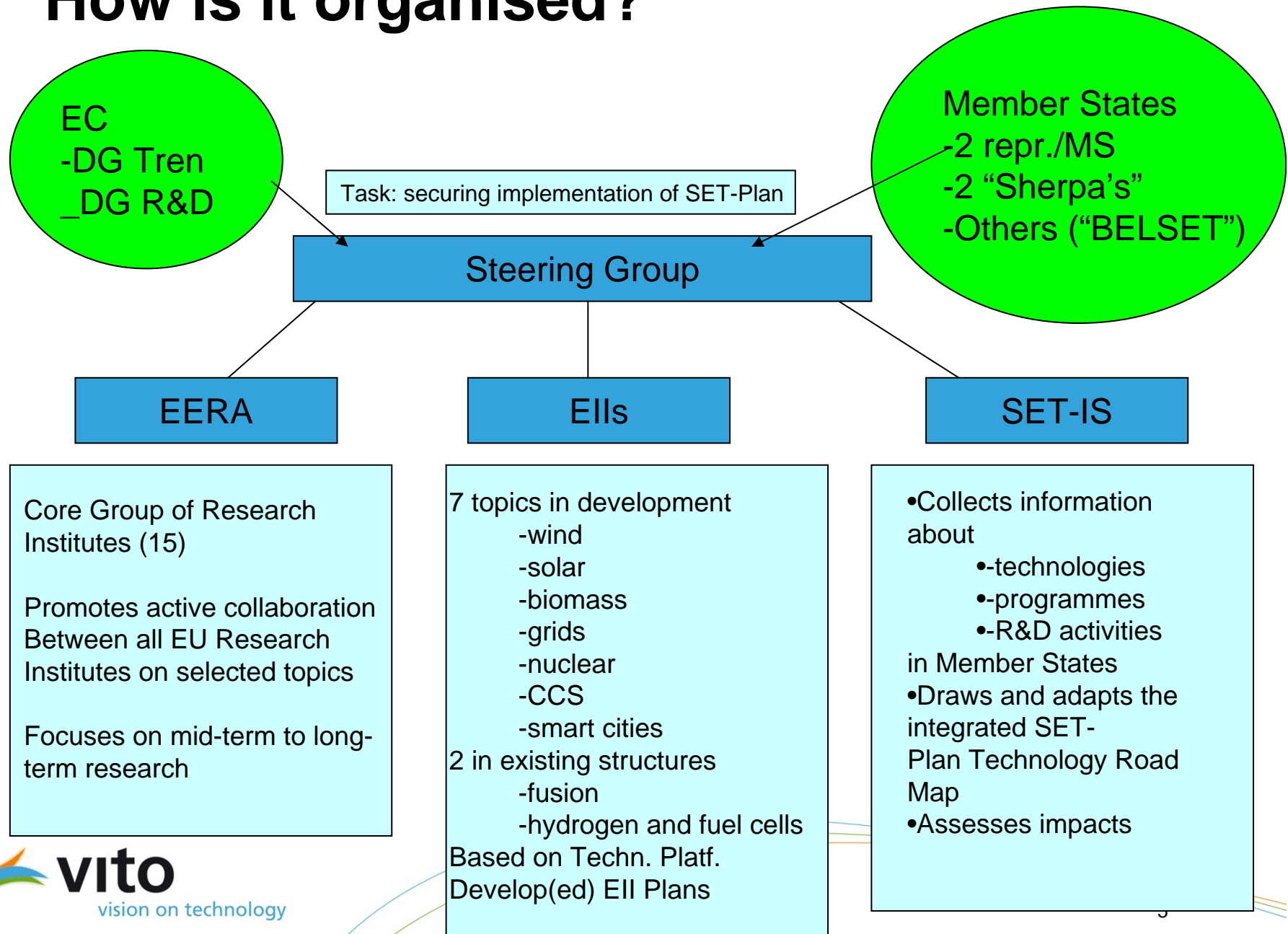
SET-Plan

- » **Technology Pillar for the EU Energy and Climate Strategy**
- » Main elements of this Strategy
 - » Three interrelated policy goals
 - » Competitive European Industry
 - » Mitigating Climate Change
 - » Reduce EU's Geopolitical Sensitive Dependency on Energy Carriers
 - » Policy targets for 2020
 - » 20% (may be 30%) GHG emission reduction in 2020 compared to 1990
 - » 20% share of renewables in energy mix
 - » 20% improved energy efficiency
 - » The long-term vision
 - » Developed countries need to reduce GHG emissions with 80% by 2050
 - » 20%-25% of GHG emissions is related to land use
 - » Remaining emissions (i.e. the energy sector) should be climate-neutral by 2050
- » To achieve all this appropriate policies are needed **and** accelerated Technology Development
- » This is what the SET Plan is about

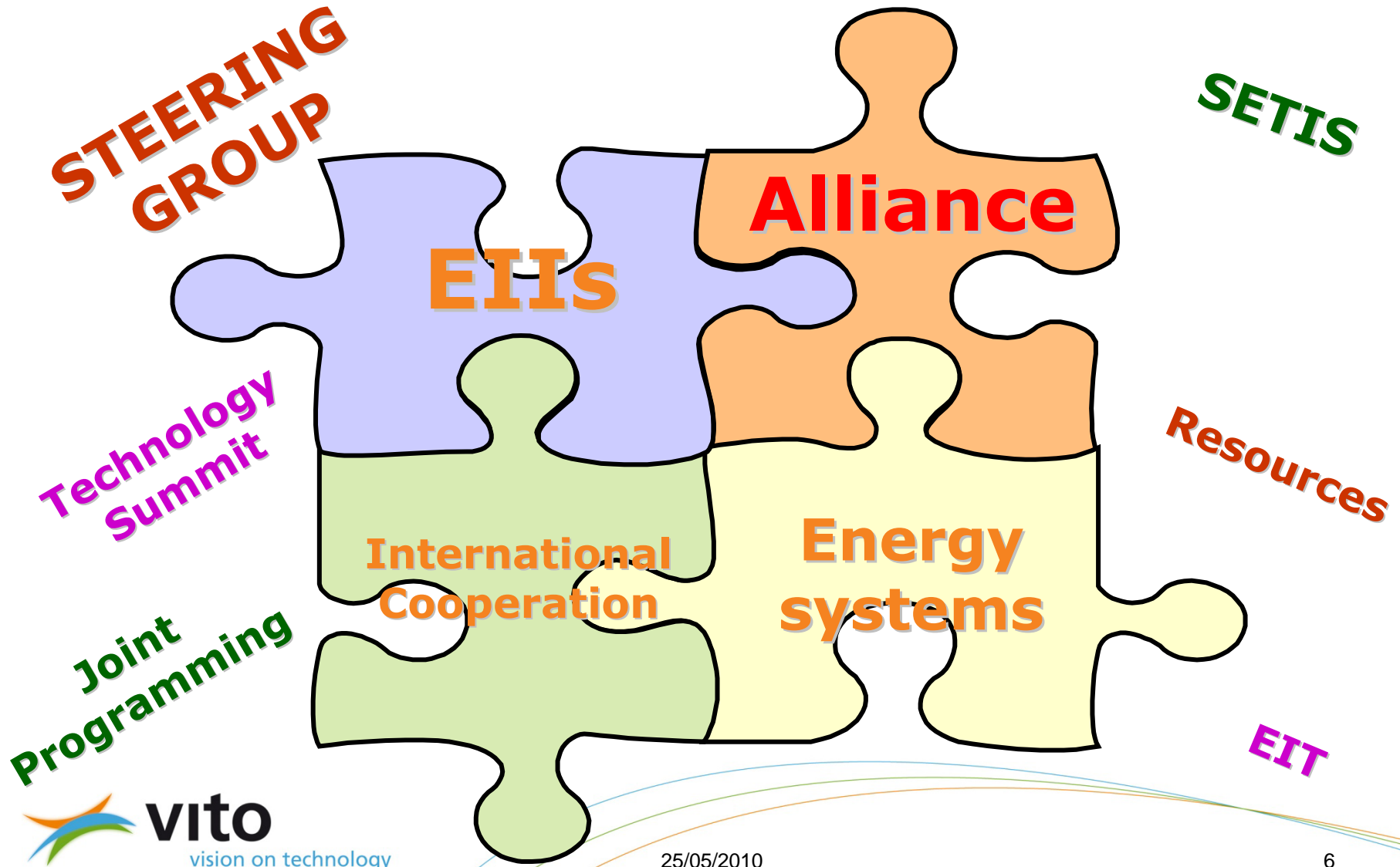
SET Plan

- » Launched as a Communication from the Commission in november 2007 “Towards a Low Carbon Future”.
- » Endorsed by Member States in Early 2008
- » Contains proposals for
 - » New ‘bodies’ of collaboration, e.g.
 - » European Energy Research Association
 - » SET Information System
 - » Steering Group
 - » European Industrial Initiatives (EII)
 - » Focus areas for EIIs
- » It is **not** a rigid document, it is an ‘emerging process’, see for instance:
- » Important recent Communication: Investing in Low Carbon Future
 - » Thoughts on how to finance this development
 - » Additonal topic for EII: Smart Cities

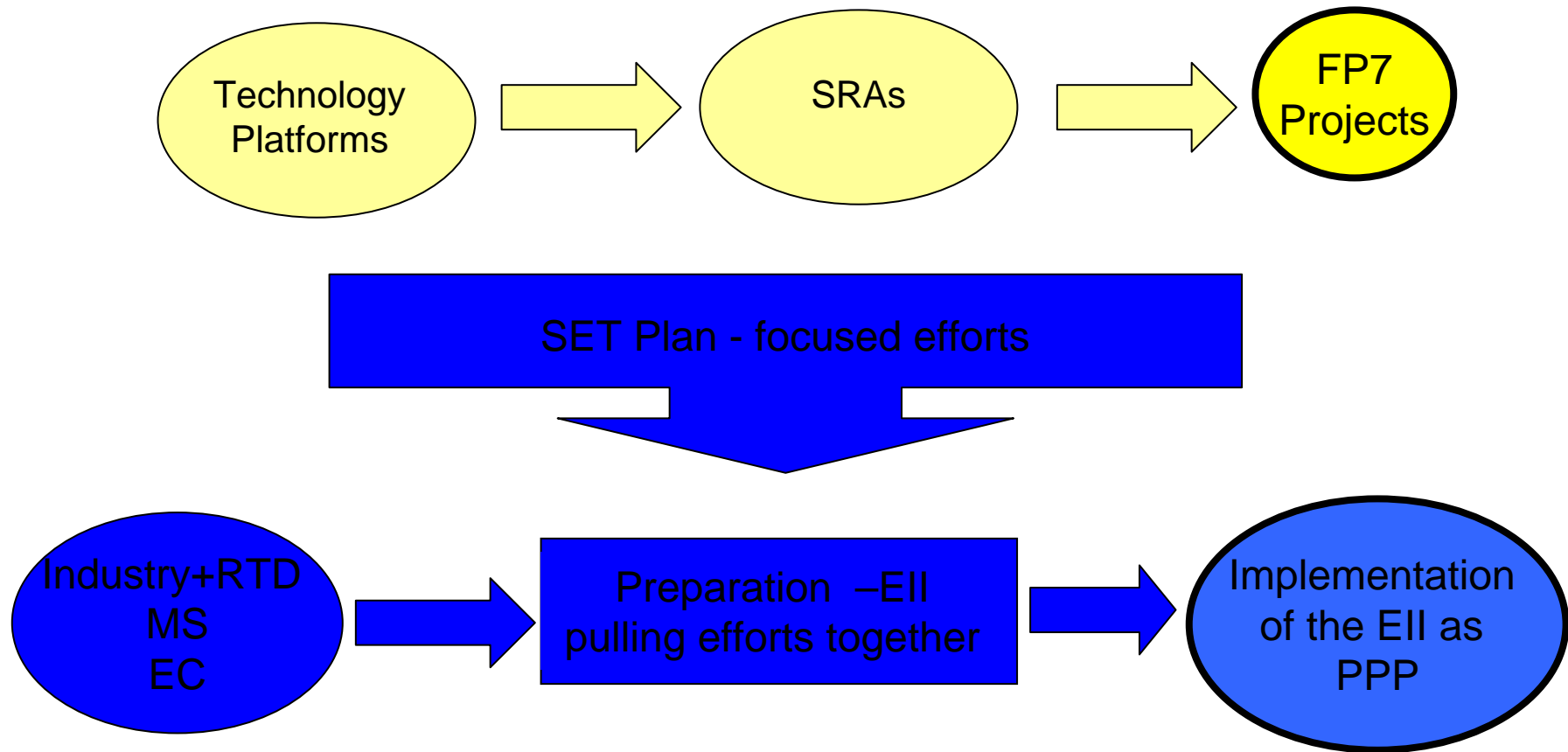
How is it organised?



SET-Plan lines of action



From TPs to actual implementation



First Results: Ells

- » Technology Specific Technology Roadmaps for EII topics with
 - » Targets for share of the energy market
 - » Financial needs to support these developments

Technology	Market Targets 2020	Est. Total R&D cost
Wind	20% Electricity	6 billion
Solar	PV: 12% CSP 3% Electricity	16 billion
Biomass	14% Energy	9 billion
CCS	Commercially feasible	13 billion
Grids	50% of Networks 'Smart'	2 billion
Fission	First GenIV prototypes	7 billion
Smart Cities	25-30 "Smart Cities"	11 billion

Issues in question

- » Are the road maps internally consistent?
 - » Not yet (e.g. renewables – grids)
- » Are the road maps consistent with EU Policy targets
 - » Yes, they ‘promise’ even more!
- » Are the figures drawn up in a consistent way?
 - » No, but overall sum might be a very good guess!
- » What parties will finance this, and how will this be done?
 - » It will be a mixture of private and public funding
 - » Current instruments (FP7 etc.) are not enough
 - » Some has already been provided in the European Restructuring Plan (4 billion)
 - » There is a possibility in revenues from auctioning of Emission Rights
 - » New Entrants Reserve (300 million credits = 4 to 10 billion Euro)
 - » 50% of 10 billion credits sales by MS have to be used for mitigation and adaptation measures. Some of this could go SET Plan

EERA

- » At first 10 Founding Members in Steering Group
- » ECN (NL) Chairman and Secretariat
- » 9 programmes in preparation
 - » Biofuels, CCS, CSP, Geothermal, Marine Energy, Materials for Nuclear, PV, Smart Grids, Wind
- » First joint research institute programs to be launched early 2010
- » Steering Group enlarged by open call
 - » 2 selected from Eastern Europe (CZ and ?)
 - » 3 additional partners (Switzerland, Norway, Austria)
 - » Will be reviewed every 2 years depending on relative contribution to EERA programs
 - » Not just on 1 topic
 - » Only 1 per member state

Financial considerations

- » In addition to financing for EIs, financing needed for
 - » EERA (5 billion)
 - » Breakthrough Research (1 billion)
 - » Other technologies, initiatives etc.
- » Total RDD&D expenditures for the period up to 2020 estimated at
 - » **80 billion**
 - » 8 billion/year
 - » Compared to current 3 billion/year in EU (public and private)
- » This means a tripling of RDD&D expenditures for R&D in Energy

Financial Mechanisms

Common EU Roadmap and Implementation Plan

Public funding partners	Project typology	Instruments
EC	High EU added value	FP
EC and MS	Large projects, EU added value, shared interests	FP (ERA-NET+), NER300, Art 169, coordinated calls, ...
MS and MS	Localised shared interests	EERA, ad-hoc arrangements
MS	Supporting domestic industry	national programmes
EIB	Very large projects	EIB loans, RSFF, guarantees, equity

Common EU reporting, monitoring and assessment - KPIs

Energy Research in Europe 2010-2020

Much more money

Joint Programs of Member States

Much more focussed

Variable Geometry

Joint Programs of Research Institutes

Larger focus on implementation

Thinking about consequences....

- » FP8: Financing programmes instead of projects????
- » Dominant industry coalitions: who will they be working with?
- » Smaller Countries: Need for focus!!!!
- » All Countries
 - » Need for specific energy research program
 - » Need for reflection on how to collaborate with other countries
 - » Which other countries have comparable or complementary interests?
 - » How do they and how can we open up programs
- » Research Institutes
 - » How can we maximise our added value in this environment?

Belgium, We Have A Problem!!!!

Do we have a good basis for energy research?

Yes

VITO

IMEC

SCK/CEN

GBEV

IBBT

Energy Institute

VIB

Do we have a critical mass R&D institute to play in EERA?

No

Do we have an appropriate Energy Research Program

No

Belgium is not ready for this right now!!

- » Good research, internationally recognised partners
 - » Smart Grids/Smart Cities: VITO and KUL
 - » Bio Energy: Ghent
 - » PV: IMEC
 - » Nuclear: SCK/CEN
 - » Many university Groups
- » But too dispersed: consolidation is needed
 - » E.g. Energy Research Institute (KUL) and VITO Energy will merge at a new site in Limburg (Genk/Waterschei)
- » Need for dedicated energy research programs
 - » To not miss first joint programming exercises VITO and IBBT have decided to join the first small call from ERA-Net Smart Grids by own resources
 - » In the coming years Belgium and its regions will have to line up with the rest of Europe

Several initiatives

- » EnergyVille (KUL, VITO, others interested).
 - » InnoEnergy colocation Smart Cities
 - » Cooperation of energy research groups in Wallonia
 - » Belgian Energy Research Association (BERA) in discussion
 - » Subscription of Belgium to a selected group of EII's
 - » Discussion on program funding....
- » But still a long way to go..... (the complex Belgium political situation doesn't help....)



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