



How to make the best of your project – Smart Grids

EURAMET Impact workshop
27 November 2018 – Delft

Gert Rietveld (VSL)



The Energy Transition

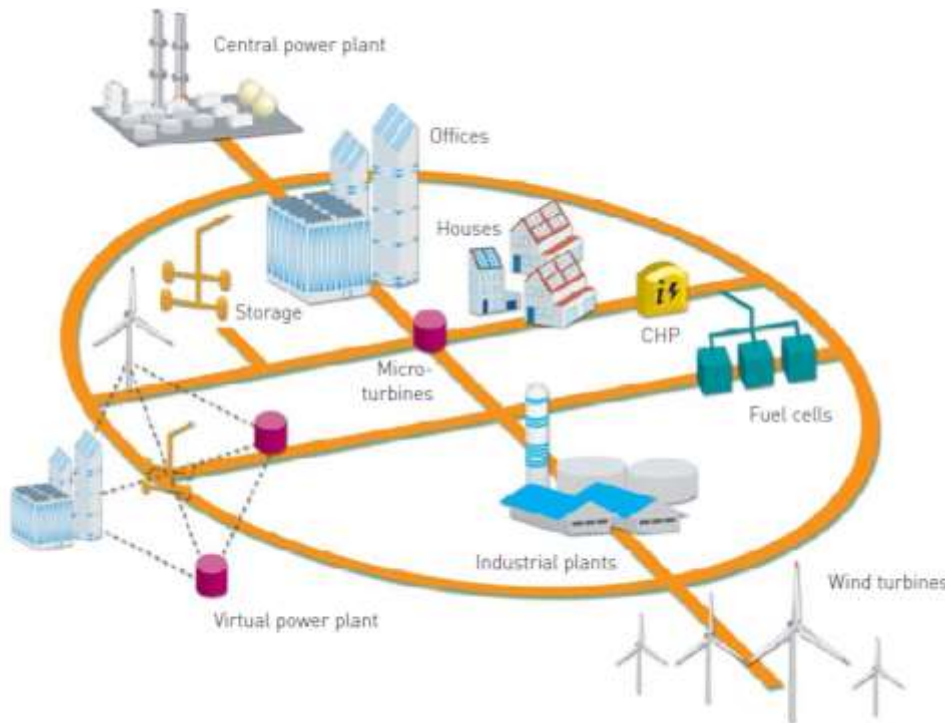
20/20/20 aims EU for 2020:

- 20 % reduction CO₂ emission
- 20 % renewable energy
- 20 % less energy (efficiency)



Energy 'trilemma' (World Energy Council)

- Reduce carbon emissions
- Maintain affordable energy
- Secure energy supply



<http://www.smartgrids.eu/documents/vision.pdf>

“The grid as we plan it”

- Two-way power flow
(prosumers)
- Local generation (renewables!)
+ few large plants
- Complex, varying loads
- Renewable energy: highly
variable, not fully predictable

Production-driven demand

Need: major change of our grids
(while business should run as usual)

Impacts supply security

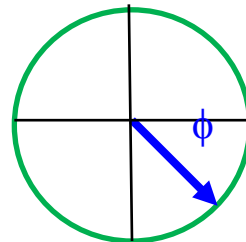
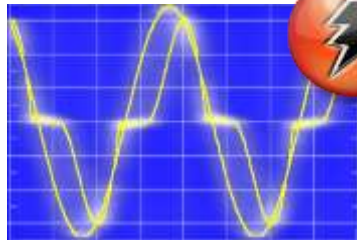
Smart Grid Metrology Challenges

Measurement tools for affordable, continuous, high-quality electricity supply

Power Quality



Revenue Metering



Grid monitoring

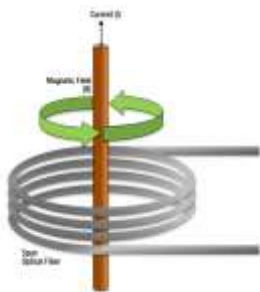
Data Analytics



HVDC



Digital Substations



New Sensors

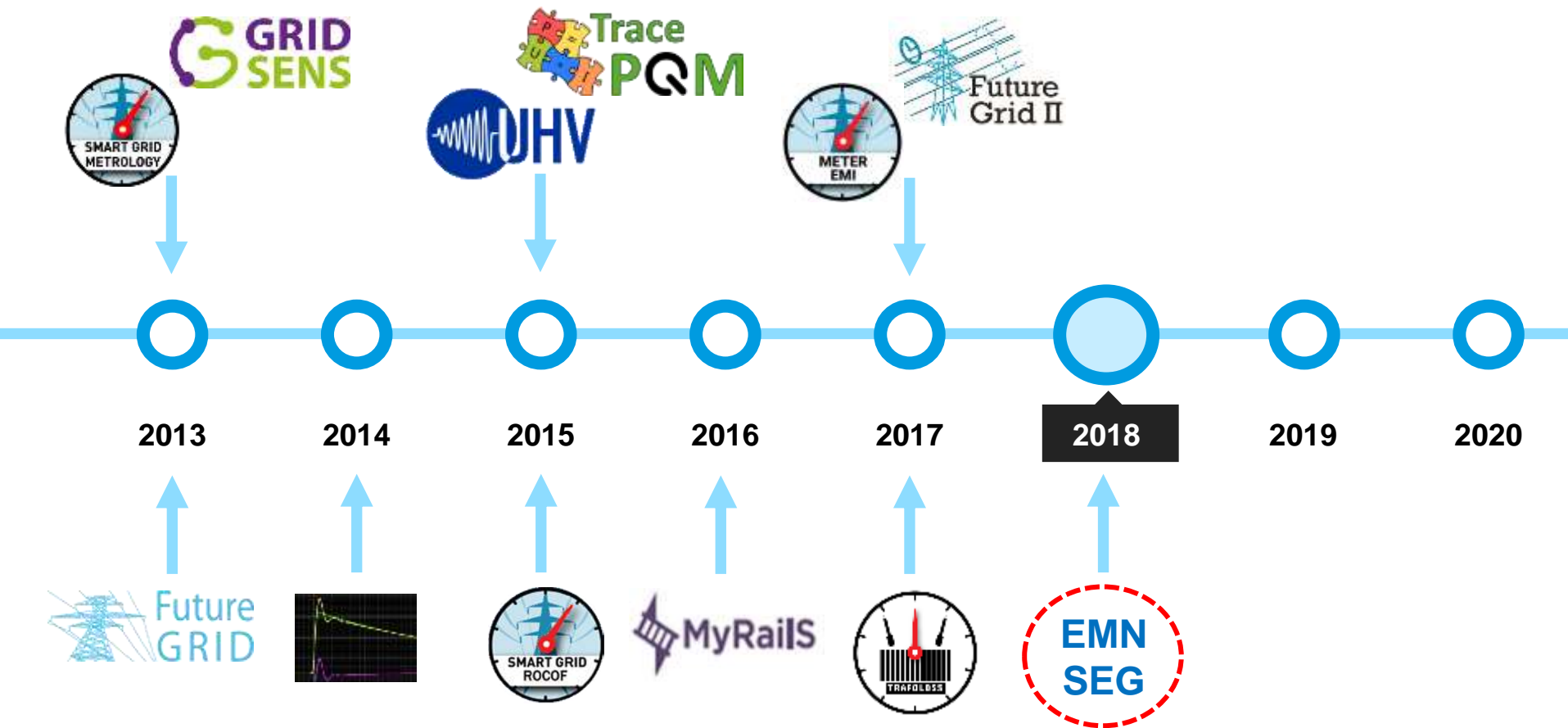


HV Testing

Grid Efficiency



15 JRPs up to now...



How to make the best of your JRP



- Link to EU regulation and standardisation where possible
- Identify your stakeholders
- Build impact in, right at the project writing
- Get (really) involved with your stakeholders

- Wherever possible, link to regulations
“is metrology support needed to implement EU regulation?”

COMMISSION REGULATION (EU) No 548/2014
of 21 May 2014

- Link to standardisation:
 - Find the relevant SDO TC's
 - Contact TC chairs and/or members
 - Let them submit measurement needs!
 - If possible, attend TC meetings



JRPs based on regulation/standardisation needs are very strong!

Standardisation needs

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In preparation for this call, EURAMET invited organisations with an interest in standardisation to submit briefing material to inform those submitting potential research topics. The following was supplied by CEN and CENELEC.

The CEN/CENELEC priority research topics can be found below:

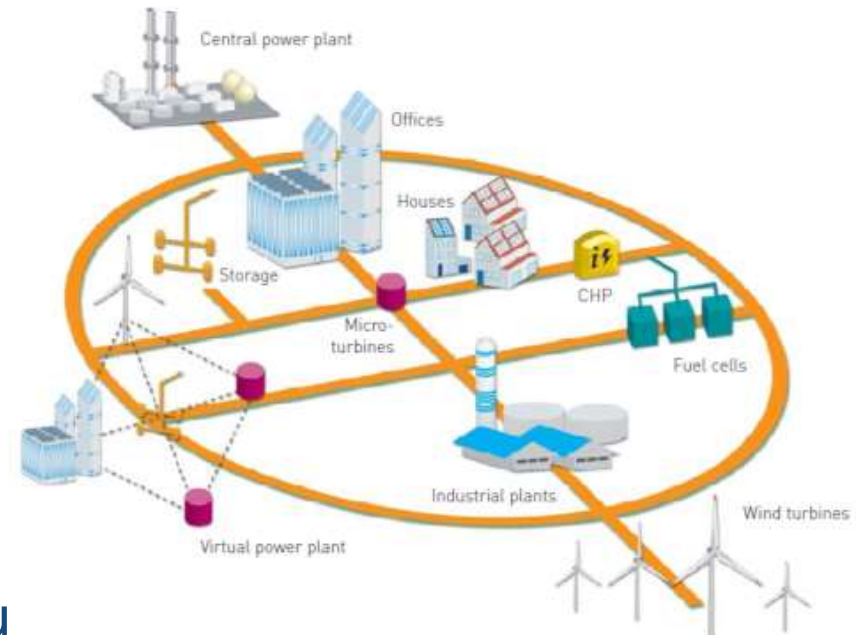
- 1 [Assessment of workplace exposure to chemical and biological agents - nano-objects](#)
- 2 [Measurement of rainfall intensity](#)
- 3 [Reverberation chambers for radiated radio interference measurements](#)
- 4 [Thermal Performance of Buildings and Building Components](#)

Identify your stakeholders

Smart Grid stakeholders

- Utilities
- Grid component manufacturers
- Instrument manufacturers
- Governments
- Standardisation bodies (CLC, IEC)
- Academia and knowledge institu

⇒ *Think how to involve each of them!*



Build impact in from the start

- Already when writing the JRP proposal, think on impact (starting thinking at the JRP end, is way too late)
 - Make sure to have sufficient science in your project, but make the link with practical applications as well
- ⇒ *Bring metrology from the lab to stakeholder practice*

Some suggestions:

- On-site measurements
- Prototyping, testing new commercial instrumentation
- New CMCs: trial calibrations during development

Ideally: stakeholder as JRP partner or collaborator

Get involved with stakeholders

- Attend stakeholder conferences!
 - Build relations, visit companies, read literature
- Joint R&D and/or joint measurements is the best impact!
 - Utilities: provide access to their grids
 - Instrumentation: evaluations, improvements
- Regular project update mails, active website
- Best Practice Guides (varying success)
- Project workshops: difficult to get sufficient stakeholder interest \Rightarrow combine with other projects, or with stakeholder conferences (special session)

Success factors for impact

Mindset (right from the start of writing the PRT and JRP)

- A lot of dedication and perseverance
- Support from fellow JRP partners
- Support from management & business developers
- Patience
- Listening - find out what is the problem
- *Relationship building* - more likely to hear the real problem
- Soft skills

and a bit of luck now and then...