



IEEE
SmartGridComm™
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IEEE INTERNATIONAL CONFERENCE ON SMART GRID COMMUNICATIONS



WS3: Integrating Renewables and Exploiting Customer Flexibility

Chaired by: Chris Develder, Ghent University - iMinds, Belgium

Smart Grid Challenges

Challenges:

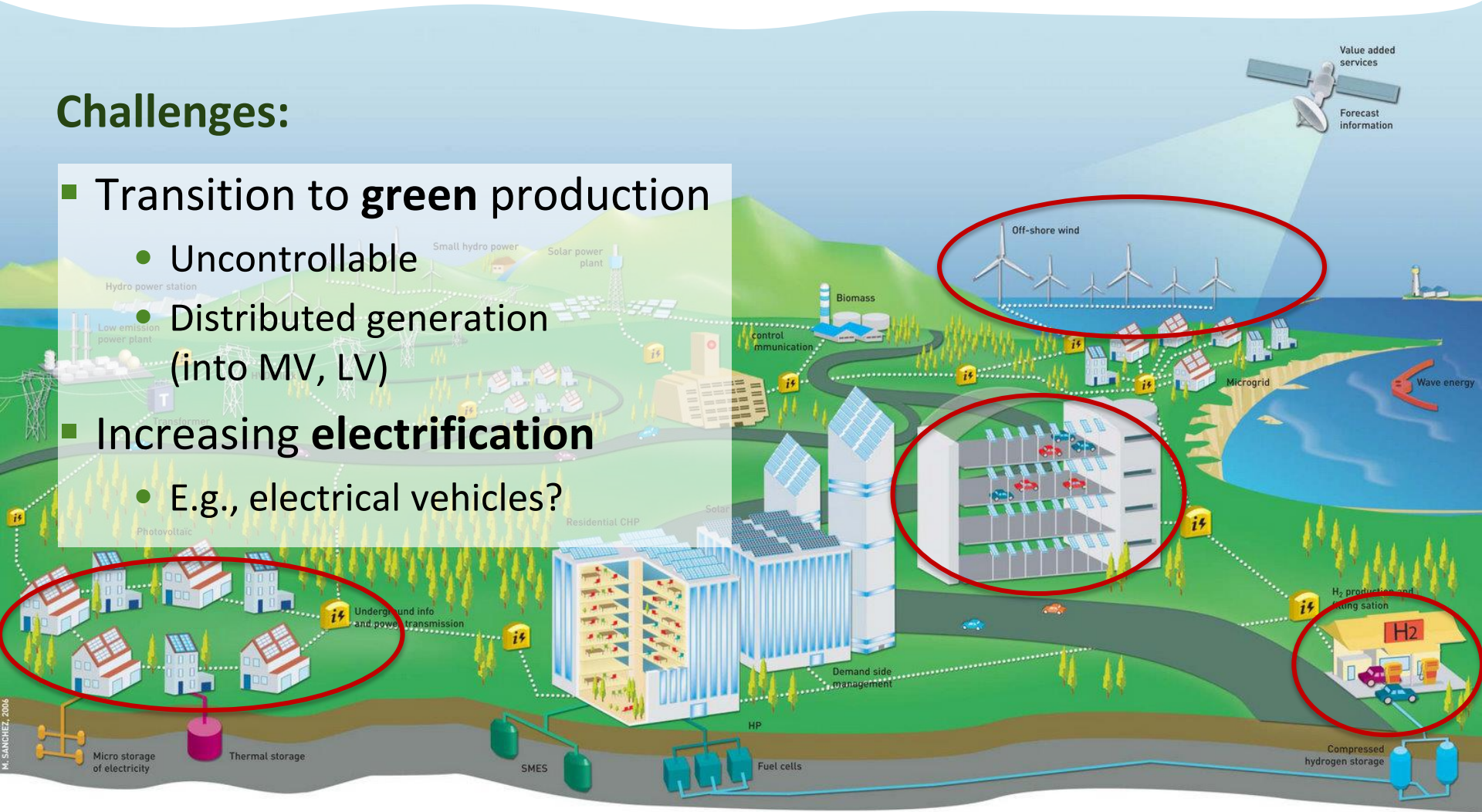
■ Transition to **green** production

- Uncontrollable

- Distributed generation (into MV, LV)

■ Increasing **electrification**

- E.g., electrical vehicles?



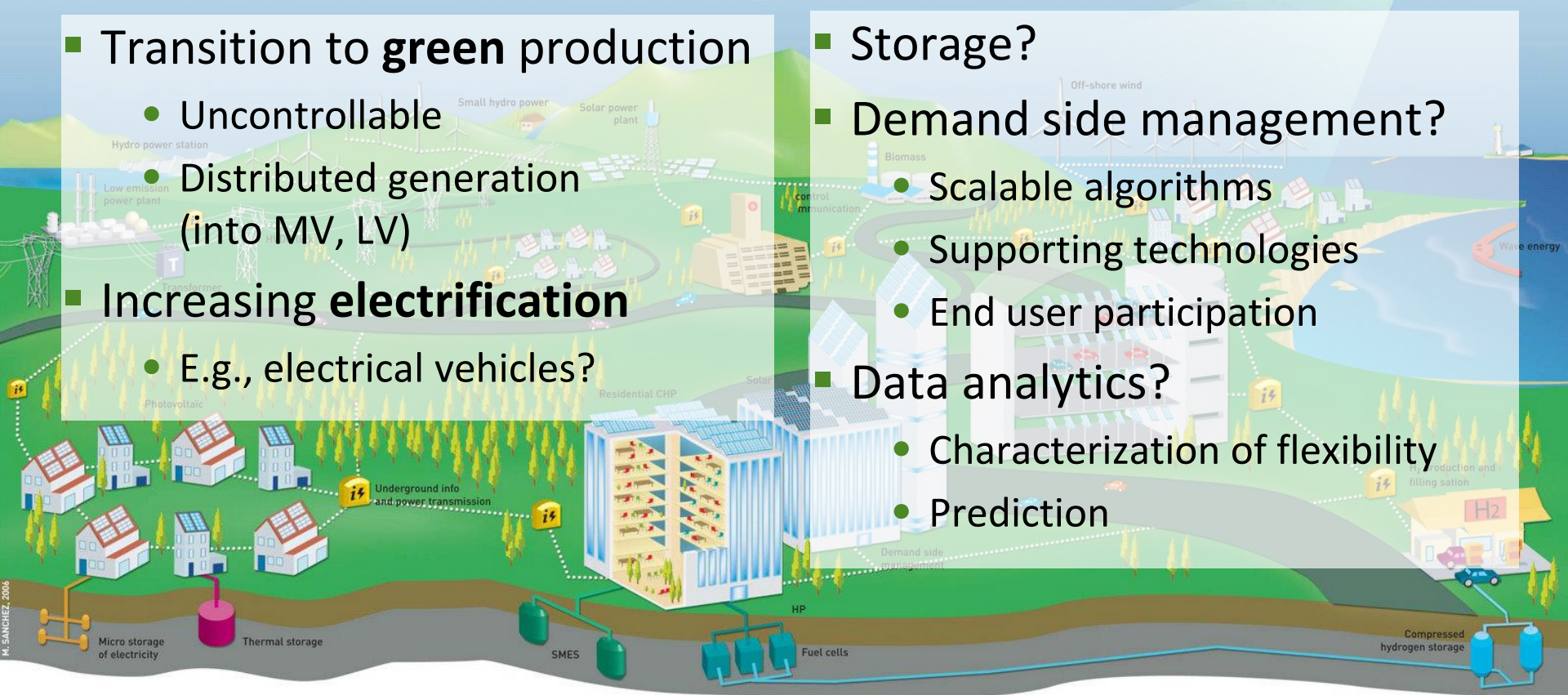
Smart Grid Challenges

Challenges:

- Transition to **green** production
 - Uncontrollable
 - Distributed generation (into MV, LV)
- Increasing **electrification**
 - E.g., electrical vehicles?

(Parts of) the solution:

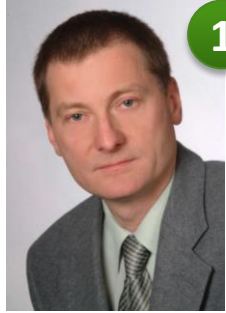
- Storage?
- Demand side management?
 - Scalable algorithms
 - Supporting technologies
 - End user participation
- Data analytics?
 - Characterization of flexibility
 - Prediction



Smart Grid Challenges: Focus of this workshop

- How to **increase RES** penetration, especially at the distribution grid level?
- How to realize **distributed control**, e.g., to address the distribution network operator's technical challenges?
- How to gather **more detailed insight**, e.g., via data mining, in the energy consumption/production patterns?
- How to identify and/or exploit flexibility in the energy **consumption** side?

Workshop Program



1 Increasing the penetration of renewable energy sources in the distribution grid by developing control strategies and using ancillary services

Marjan Jerele,
Elektro Gorenjska, Slovenia



2 Demand response of large heterogeneous residential clusters: Combining system level objectives with local constraints, from reinforcement learning to droop control

Bert Claessens, Vito, Belgium

..... *Break [15:30-16:00]*



3 SmartHG: Energy demand-aware open services for smart grid intelligent automation

Enrico Tronci,
University of La Sapienza, Italy



4 Demand flexibility for load aggregations

Gianfranco Chicco,
Politecnico of Torino, Italy



Anna Scaglione,
UC Davis, CA, USA

5 **Panel Discussion:**
Extensive Q&A and additional discussion with the audience!