

Panel session TASK-17: DG, DR and storage Flexibility: Dream or Reality

Matthias Stifter, AIT

René Kamphuis, TNO

IEA (located in Paris) manages programs

- Countries and organisations take part in programs
- Programs initiate tasks
 - DSM program: 25 tasks (partially closed)
 - Coverage of all perspectives of DSM (user/customer, regulatory, technical)
 - Not research project but assessment of projects and developments
- Average duration per phase 2 years
- Task 17
 - Now in third 2-yearly phase
 - Operated by AIT, Austria and TNO, the Netherlands
 - 7 countries and 1 international organisation provide country experts

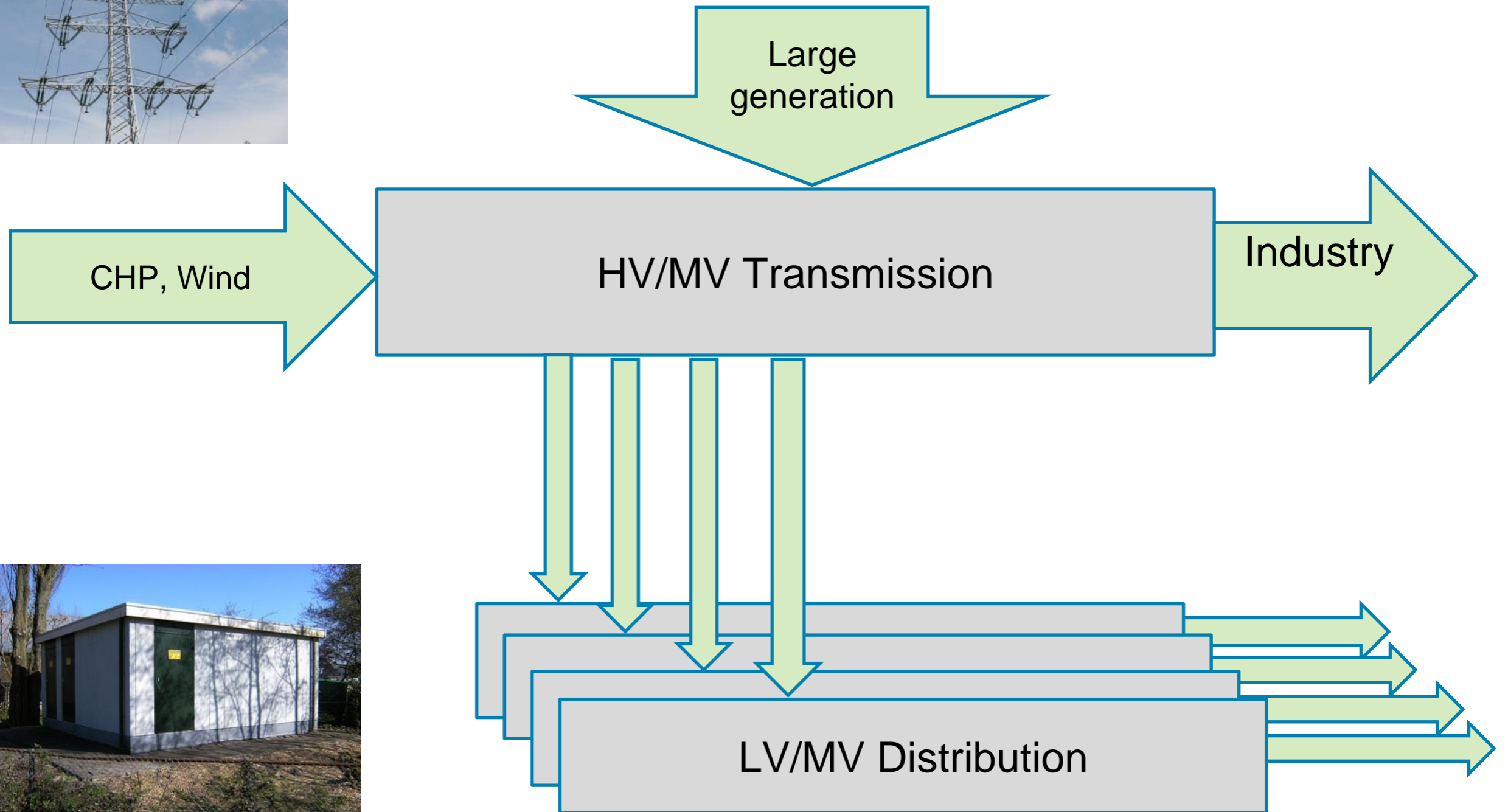
Operating mode

- Bi-annual expert meetings for sharing experiences
- Panel sessions and events
- Deliverables of subtasks
- DSM university via Webinars
- Interaction with other tasks (business models, usability studies)
- Subtasks
 - Subtask 10: Role, and potentials of flexible prosumers (households, SMEs, buildings)
 - Subtask 11: New roles for actors
 - Subtask 12: Sharing experiences and finding best/worst practices
 - Subtask 13: Conclusions and recommendations

Flexibility (Demand response <> Generation uncertainty)

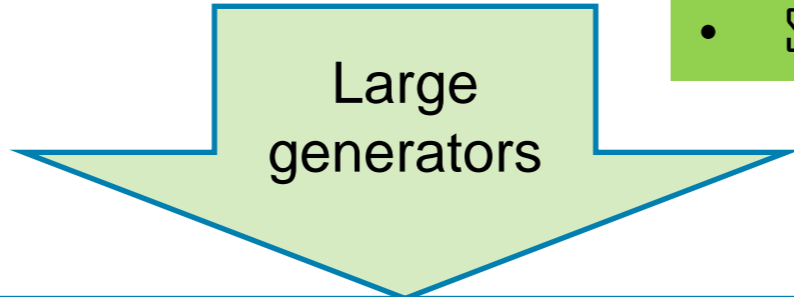
- Electricity grids
 - Decarbonisation/electrification/substitution of carrier
 - Limits of embedding more distributed and dispersed generation reached (local: **Voltage**/ global: **frequency**)
 - Smart grids and (hybrid) energy storage are key to solutions

Power flows in electricity grids

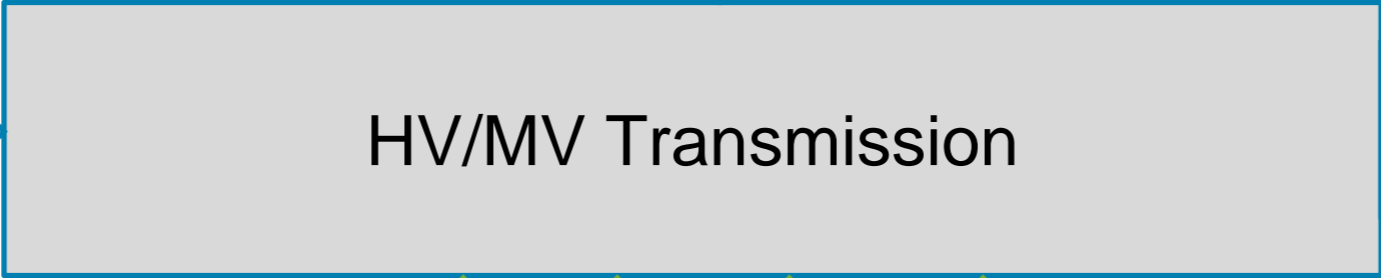


Transition of electricity grids

- New types of generation
- Electrification
- Simultaneous/ bidirectional
- Synergy electr./gas/heat/cold



Combined heat/power, wind



Industry



μ (C)CHP

Solar cells



EVs

Heatpumps, Air



Flexibility (Demand response <> Generation uncertainty)

- How to **enable flexibility in electricity production and consumption through ICT** and the impact of it on the stakeholders:
 - What are the DER flexibility potentials?
 - How do we manage these (VPPs)?
 - What are the roles of actors
 - What is the effect on operation of grids?
 - What are the benefits?

Enjoy

AIT Austrian Institute of Technology	TNO Netherlands organization for science and technology
Matthias Stifter	René Kamphuis
Energy Department Complex Energy Systems Giefinggasse 2 1210 Vienna Austria T +43(0) 50550-6673 M +43(0) 664 81 57 944 F +43(0) 50550-6613 matthias.stifter@ait.ac.at http://www.ait.ac.at	Energy efficiency program Service enabling and management Eemsgolaan 3, 9727 DW Groningen T +31 (0) 621134424 PO Box 1416 9701 BK Groningen The Netherlands rene.kamphuis@tno.nl www.tno.nl