

Dipl. Ing. Andreas Lugmaier
Coordinator of the NTP Smart Grids Austria
email: Andreas.Lugmaier@siemens.com

04.12.2008



SMARTGRIDS
AUSTRIA

National Technology Platform (NTP) Smart Grids Austria

1. Background
2. Platform
3. First results and examples



1. Background

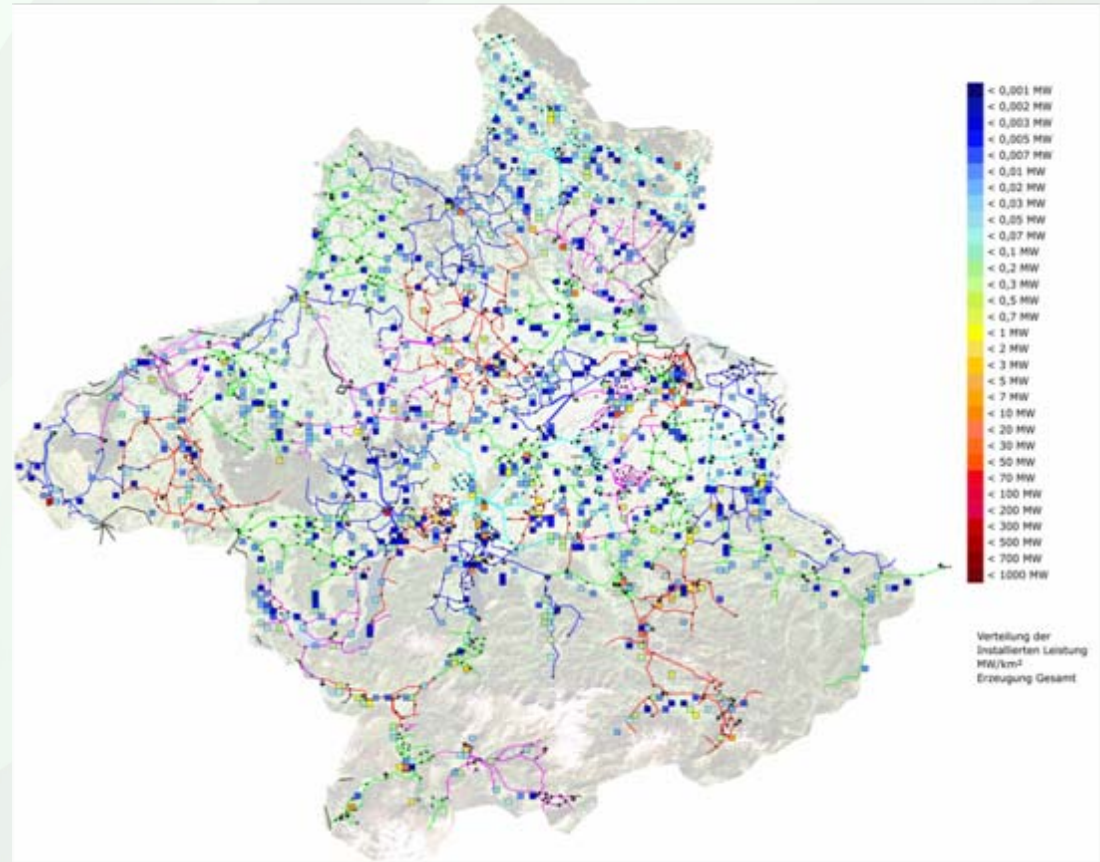
2. Platform

3. First results and examples

Why Smart Grids?

→ Status Upper Austria 2005

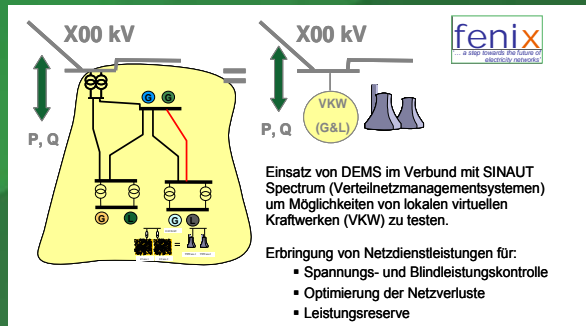
Source: DG Demonetz, Dr. Andreas Abart, Energie AG Netz



National starting conditions

In the area of „Smart Grids“ Austria can contribute by:

- an industry with high technology competence and know how, shown by products and innovations
- innovative grid operators and electricity suppliers
- complementary and active R&D institutions
- a supporting R&D environment



1. Background



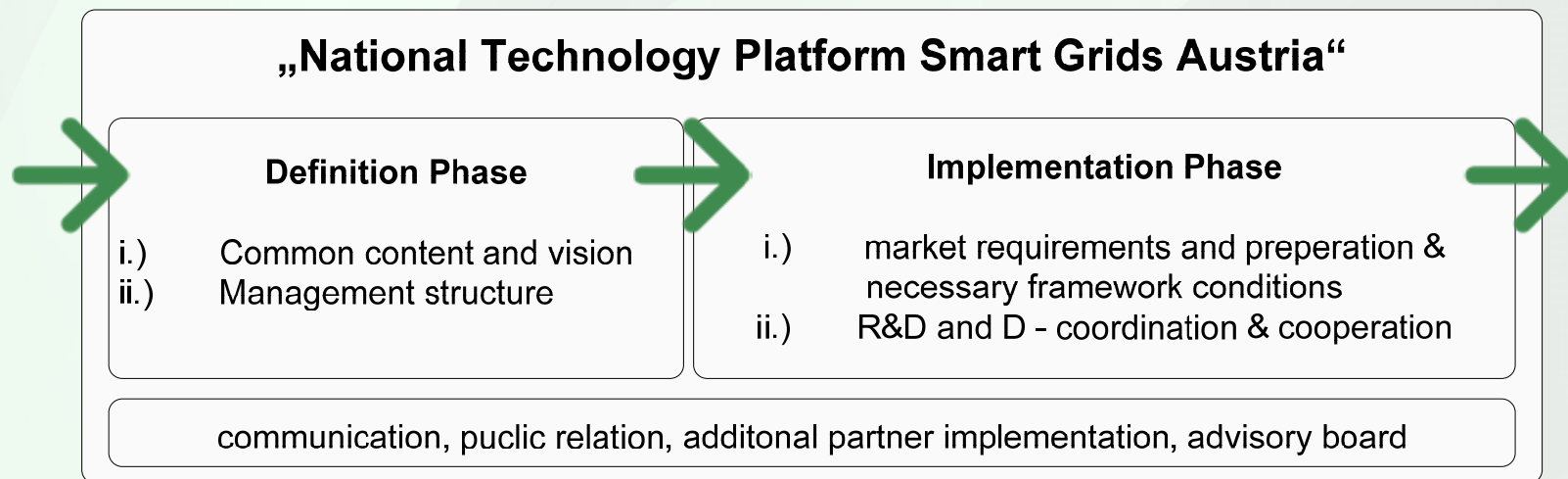
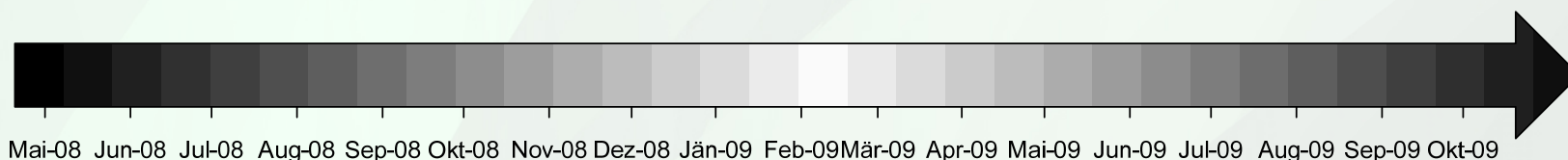
2. Platform

3. First results and examples

What is Smart Grids Austria?

The National Technology Platform Smart Grids Austria...

- is a consortium of significant stakeholders in the area of electrical energy supply
- aims to act as THE strategic cooperation partner and as THE national coordination platform for smarter electricity grids of the future in Austria

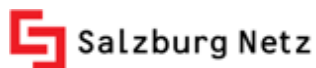


Members - Status: November 08

Industry



Network operators, Energy suppliers



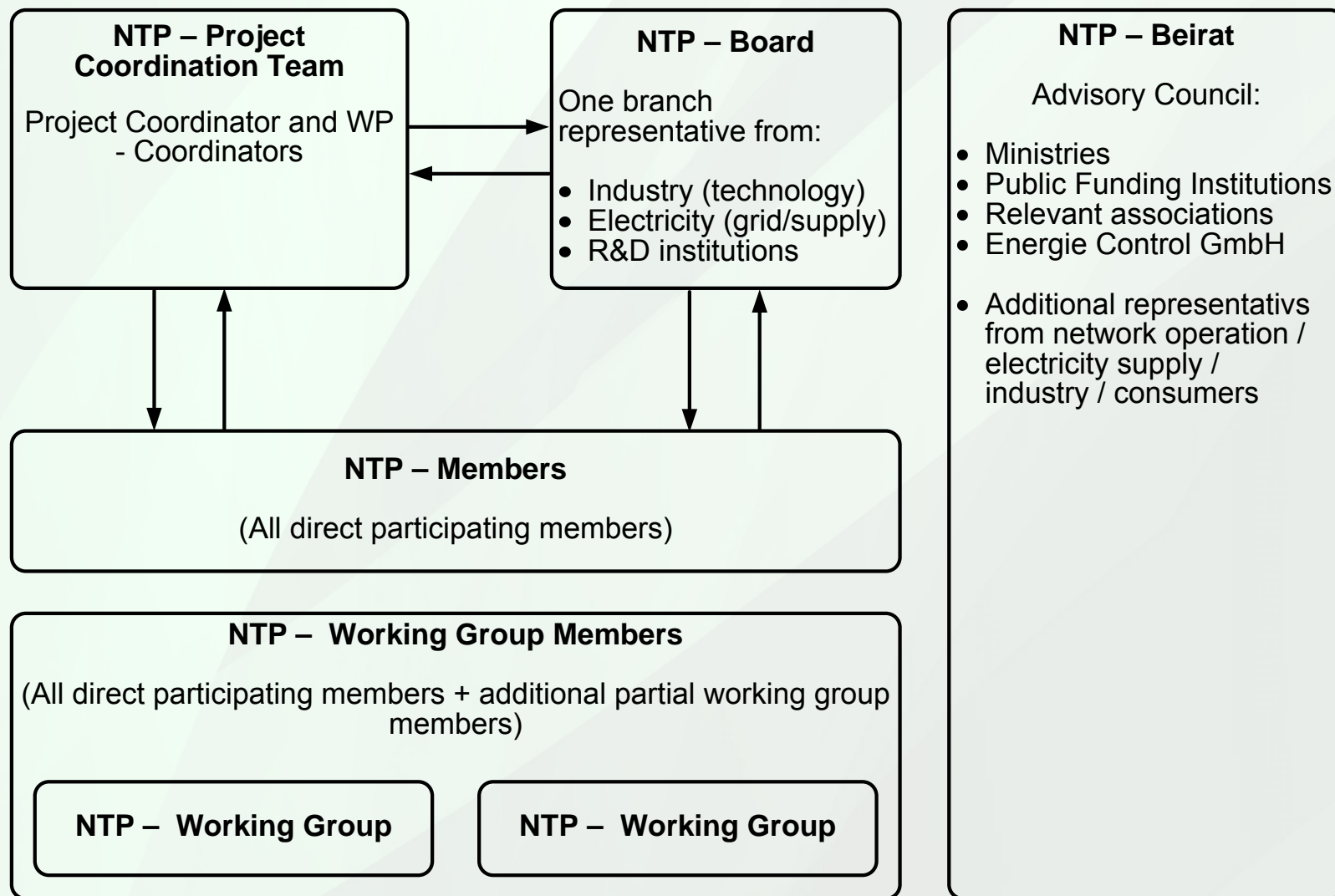
R&D Institutions



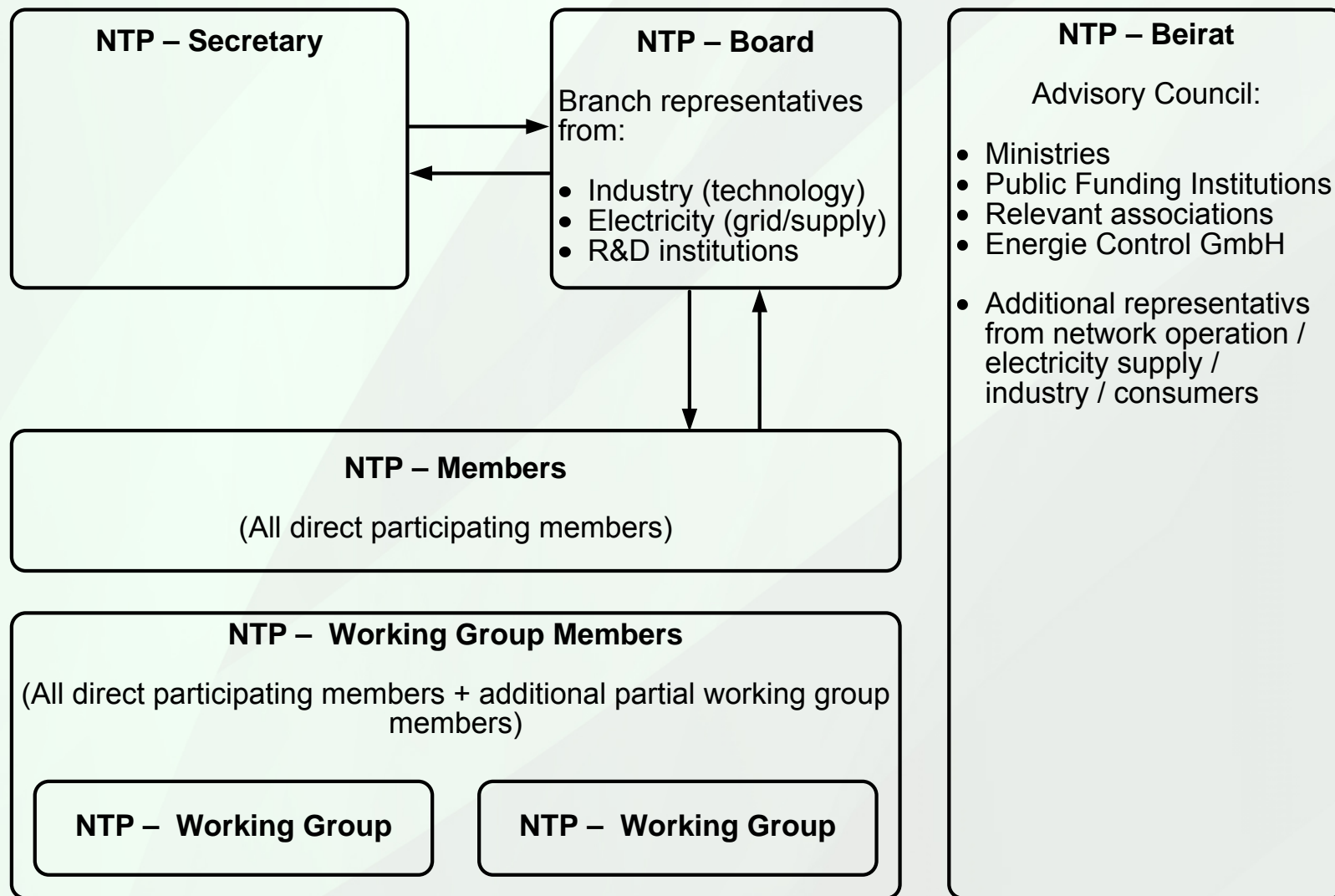
Consumer, User



Actual and future structure



Actual and future structure



Expected Results (1/2)

Roadmap - Smart Grid Austria

Definition
and
Vision

RD & D aspects

Market aspects

Framework
conditions

Deployment Strategy Smart Grid Austria

RD & D Deployment aspects
What? When? How?

Discussion Paper
RD & D Framework conditions

NTP Smart Grids Austria
Managementstructure

NTP Smart Grids Austria

- Logo
- Website: www.smartgrids.at
- PR
- Presentation material

Expected Results (2/2)

- To bundle the strength of different stakeholders
- To use synergies of the different Stakeholders efficiently
- To show competence through international visible light-house projects
- To indicate, how to overcome existing barriers



1. Background

2. Platform

→ 3. First results and examples

Definitions

DG Dispersed Generation, Distributed Generation

DSM Demand side management

VPP Virtual Power Plant

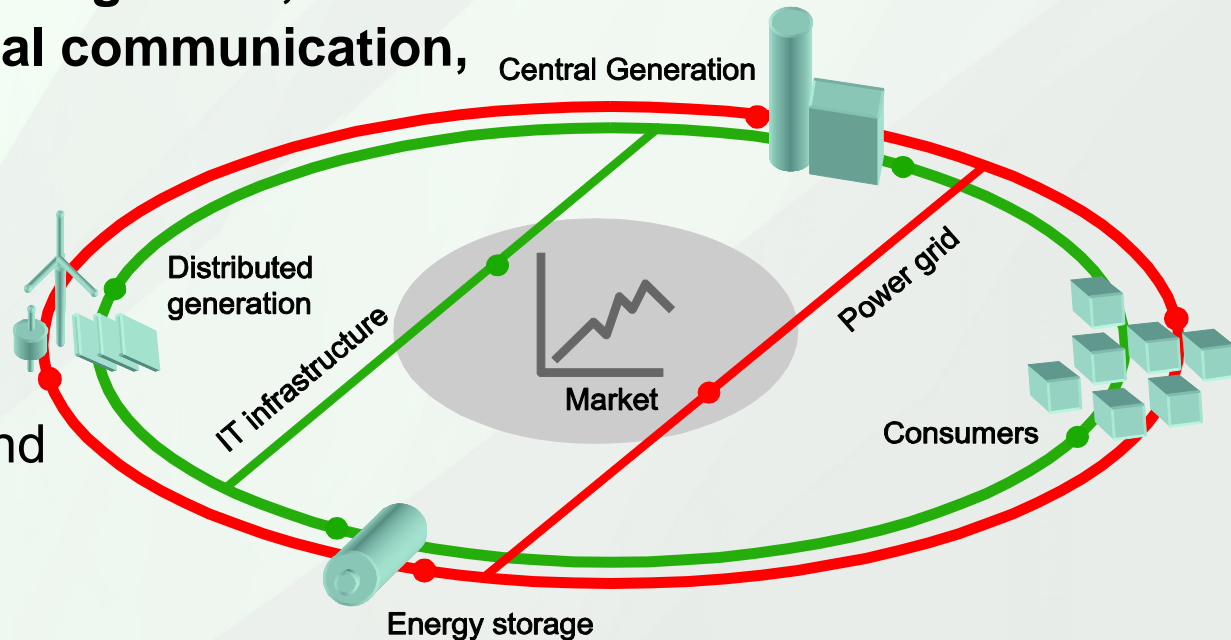
AMR Automated Meter Reading

Smart Grids Definition

→ **Smart Grids are power grids,**

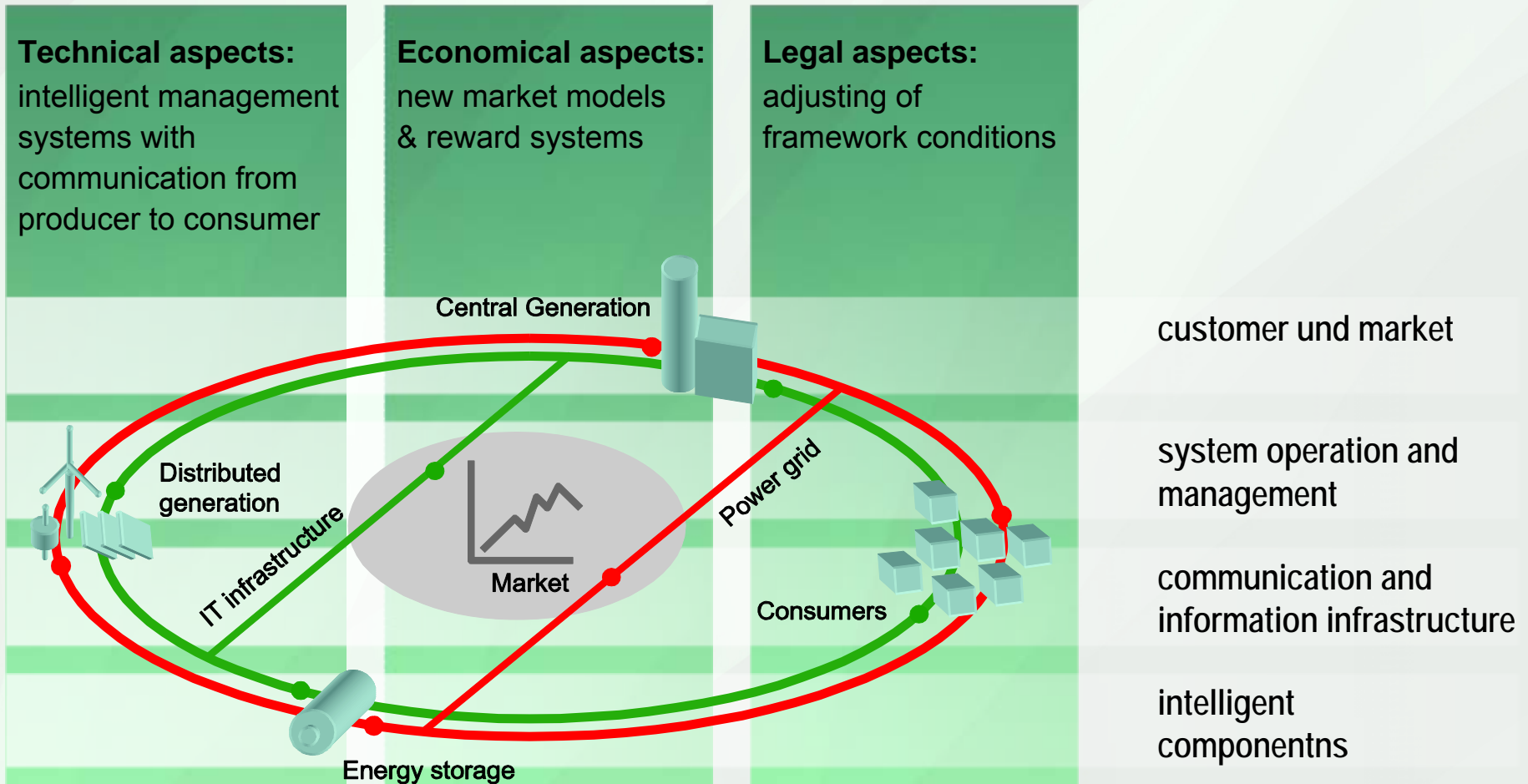
with a **coordinated management**,
based on **bi-directional communication**,
between

- grid components
- Generators
- energy storages and
- consumers



to **enable an energy-efficient and cost-effective system operation**
that is **ready for future challenges** of the energy system.

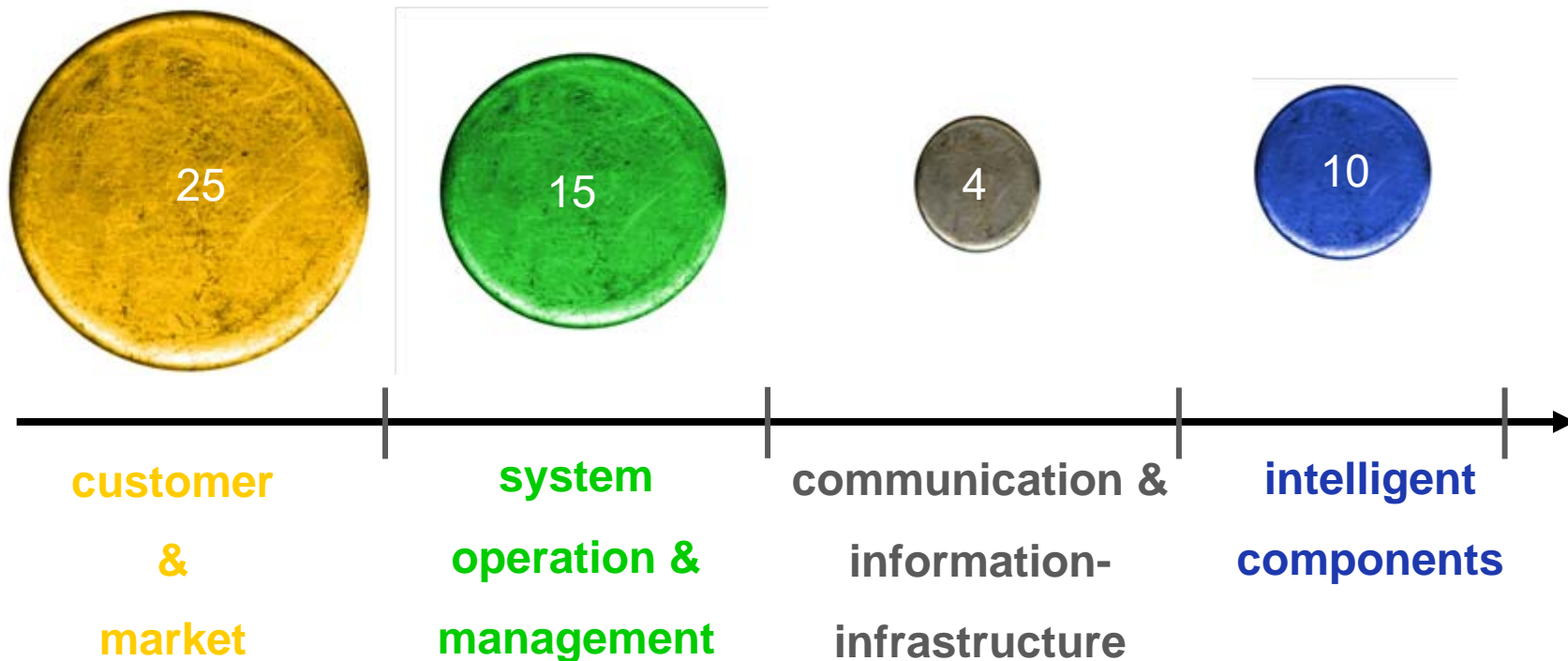
Aspects und thematic areas



Source: National Technology Platform Smart Grids Austria

Austrian R&D Focus

Number of finished and actual running Austrian & European R&D projects
in the area of Smart Electricity Grids



Quelle: National Technology Platform Smart Grids Austria

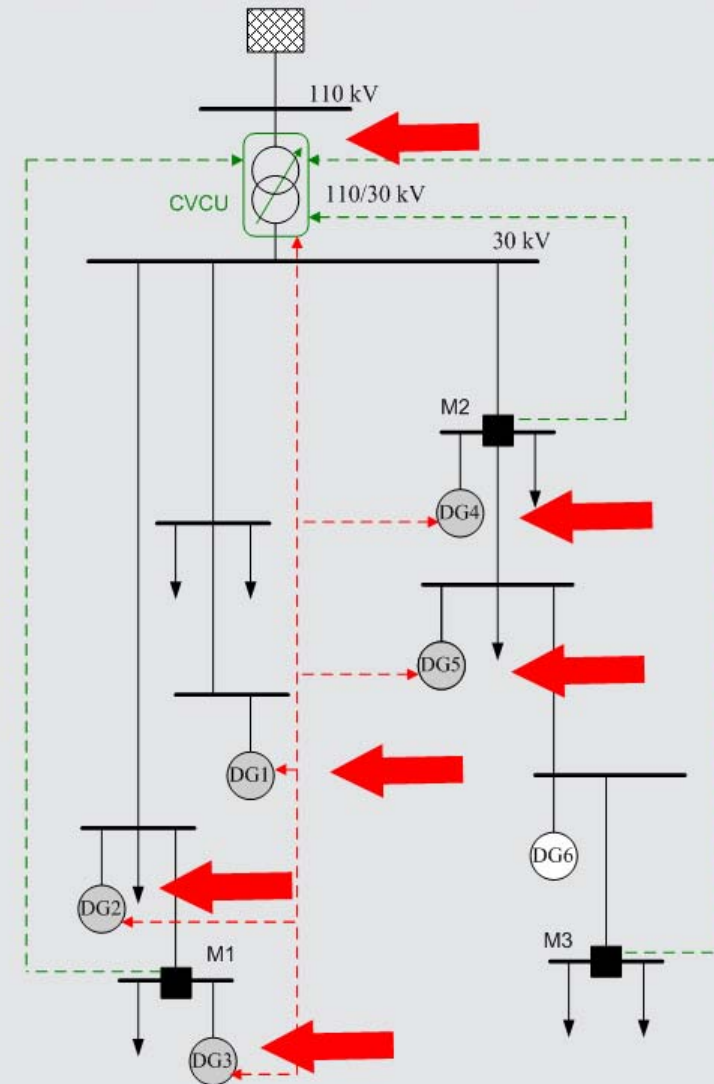


Innovative Voltage Control Concepts for Active Distribution Grids

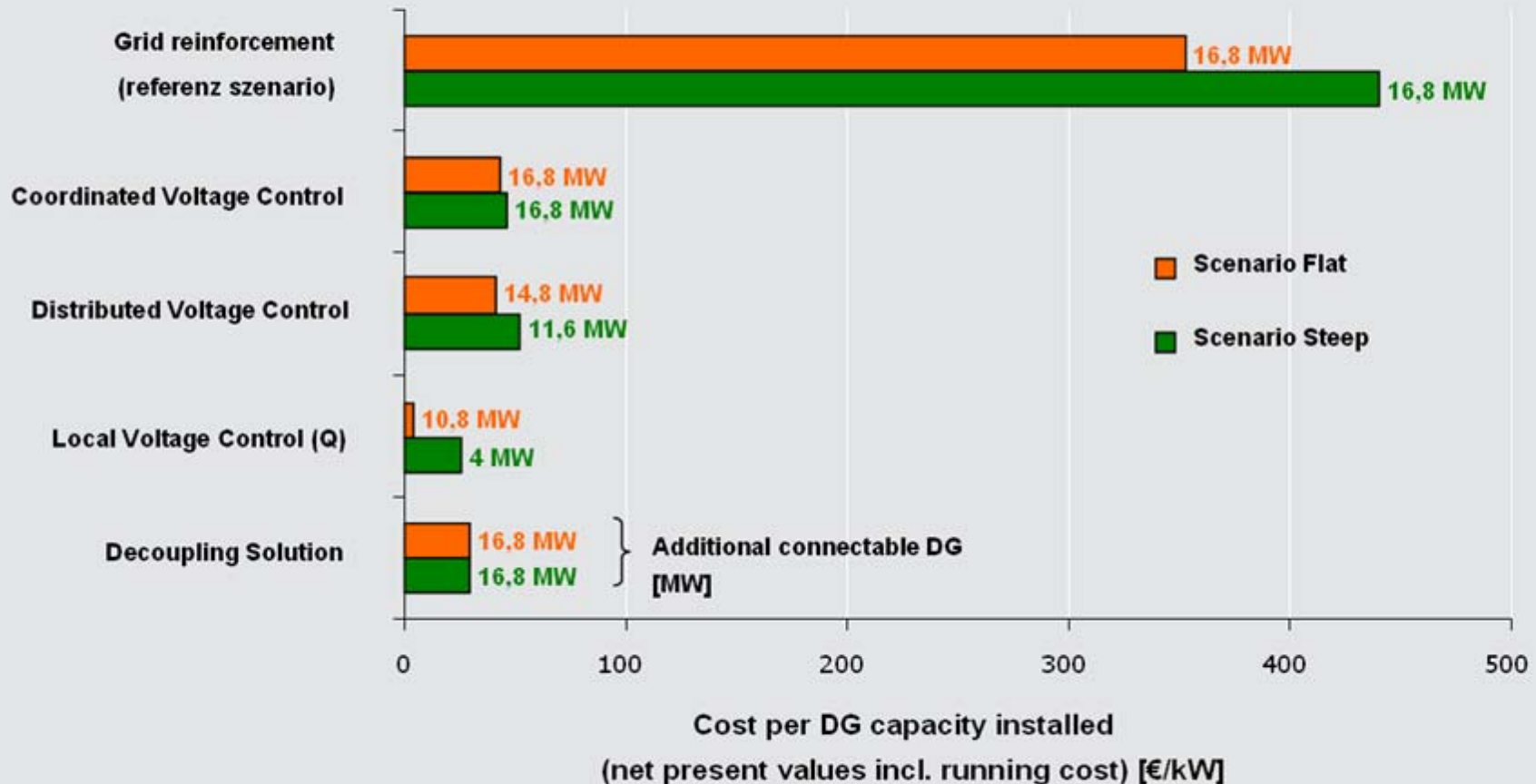
„Project planning of models for an integration of a high as possible share of distributed generation

- with perpetuation of power quality and
- high macroeconomic profit

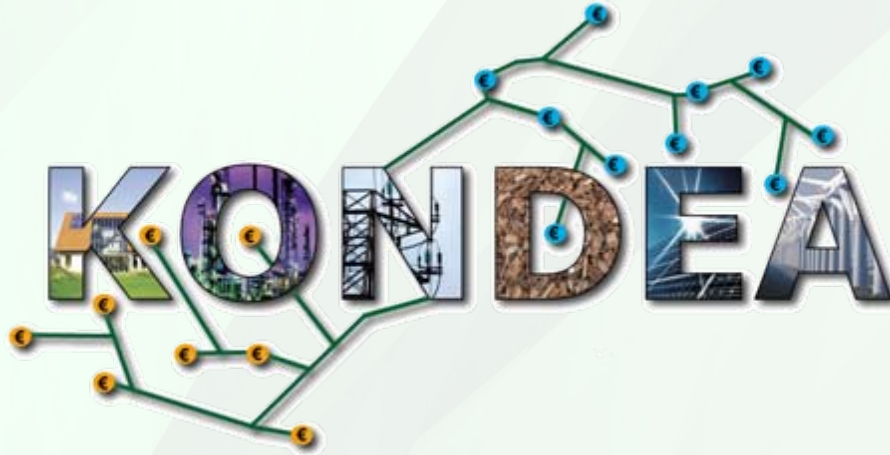
Step	OLTC	DG unit	load	VR
Current Practice	fixed set-point	-	-	-
"Decoupling" of Voltage Control	fixed set-point	-	-	✓
Local Voltage Control	fixed set-point	✓	✓	✓
Distributed Voltage Control	variable set-point	-	-	✓
Coordinated Voltage Control	variable set-point	✓	✓	✓



Case Study 1



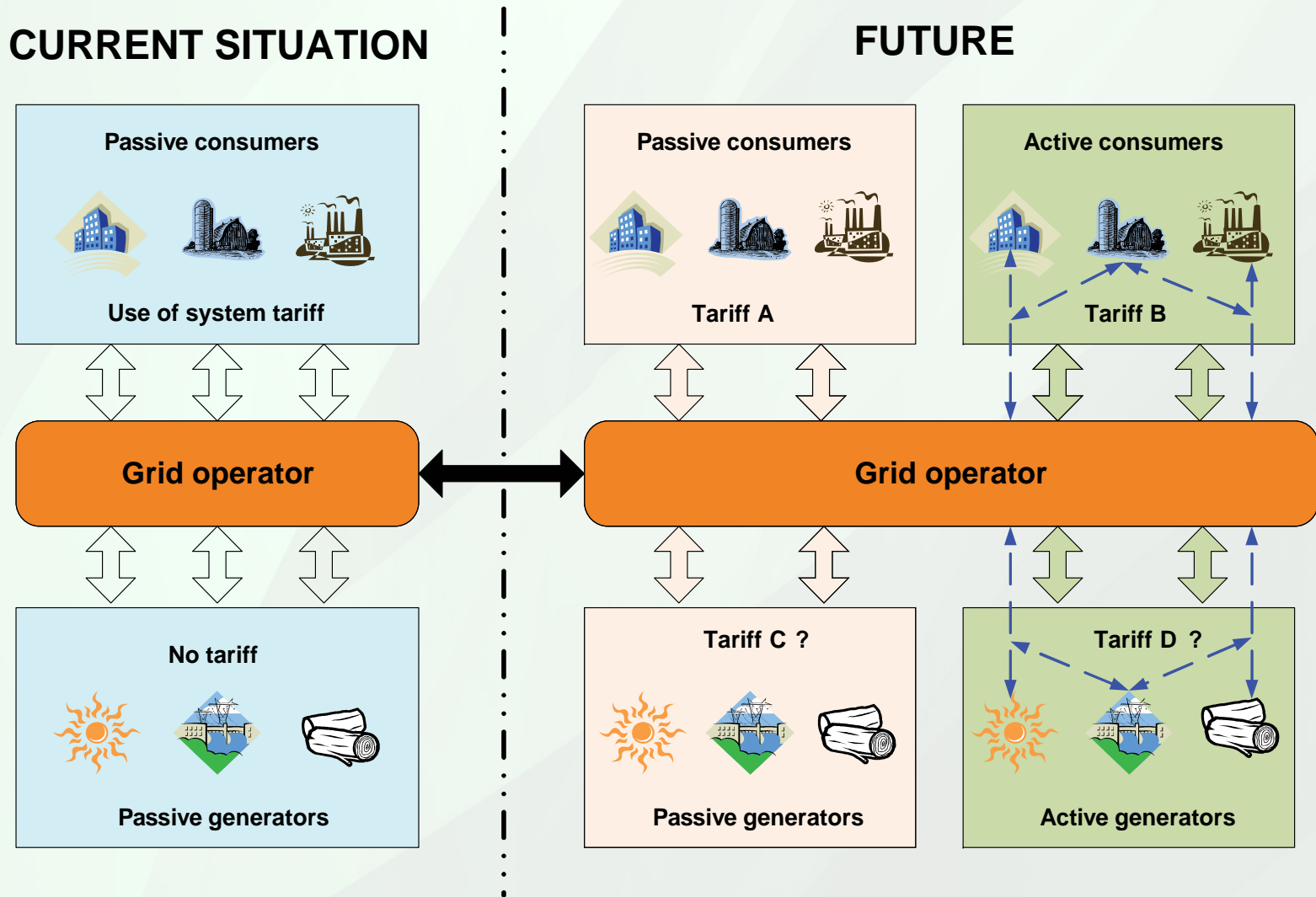
Complementary projects



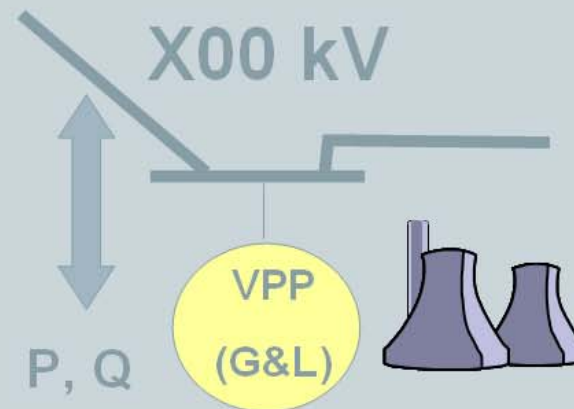
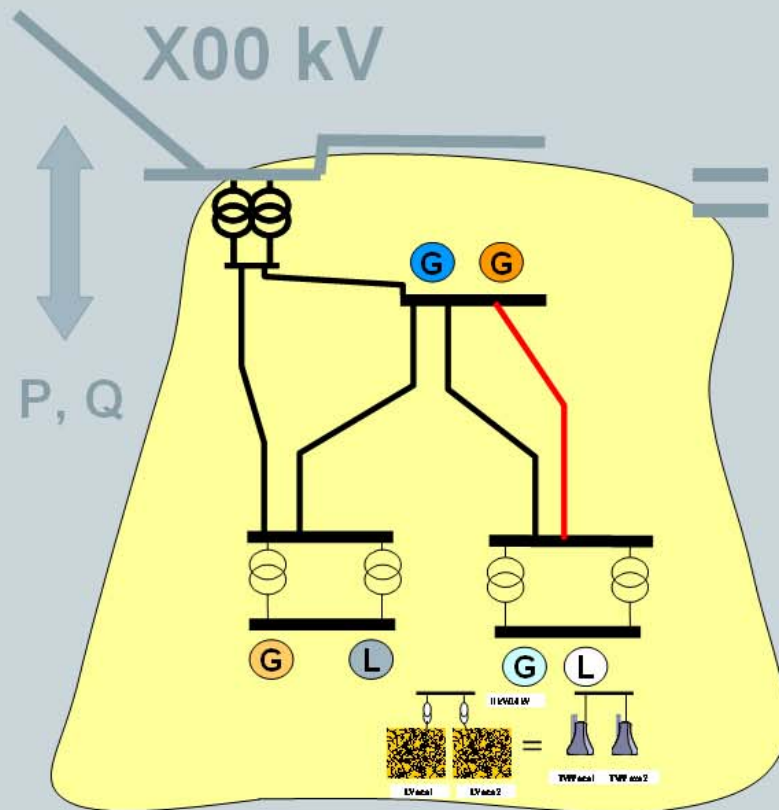
Key topics:

- Which technical grid operation solutions have the potential to enable a tight cooperation between distribution grid operators, producers and consumers in the future?
- How can innovative business models be arranged, in order to enable an energy-efficient active grid operation achieving minimal cost for society?

Complementary projects



Decentral Energy Management System (DEMS) & Distribution Management System (SINAUT Spectrum)



„DEMS“ in cooperation with Distribution Management System „SINAUT Spectrum“ is used to test possibilities for local based VPP

Goal is to provide as much ancillary services as possible for:

- Voltage- and VAR-Control
- optimizing grid losses
- active power reserve

Summary

- The National Technology Platform Smart Grids Austria...
 - is a consortium of significant Austrian stakeholders in the area of electrical energy supply
 - aims to act as **THE** national strategic cooperation partner and as **THE** national coordination platform for smart electricity grids
 - aims to support the creation of the right framework conditions to show competence through international visible light-house projects

- The main focus of performed and existing Austrian R&D projects is on
 - Active Distribution Networks (SDD Priority #5) and
 - New Market Places, Users and Energy Efficiency (SDD Priority #6)