



ENERGY UNION: ITS IMPLICATIONS AND PERSPECTIVES FROM TSO POINT OF VIEW

ENERGY CHARTER FORUM, BUDAPEST, 7.OKTOBER 2015, MAG. SCHUH

Energy Union: Political wording

HISTORICAL EU

- Coordinated politics
- Resign of national autonomy
- Transfer of (legislative) power to European Union

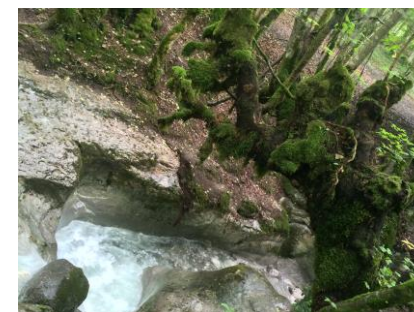
- Internal market (4 free movements: goods, capital, services, people)
- Economic, Currency, Immigration, foreign affairs

Energy Union: Political aims

AIMS

- reaching european climate targets

- 2020: 20% GHG, 20% RES, 20% EE
- 2030: 40% GHG, 27% RES, 27%-30% EE
- 2050: 80-95% GHG



- synchronising european, national & regional climate & energy politics

- eurowide implementation of necessary tasks

- need of change of frame conditions (functioning energy market, permitting procedures, financial support of RES, energy mix, common plannings etc.)

Energy Union: Possible Expectations



EXPECTATIONS

- eurowide coordination in financial, tax and foundation questions
- central european energy policy (realisation of the principle of subsidiarity) in energy/ electricity production, storage, interconnections – energy market
- transfer of the principle of security of supply from the national to the supranational level



Energy Union: reality

Security of supply

- Interconnectors
- Security of supply gas & electricity
- Strengthen Domestic production – reduction of import
- RES integration
- Regional Cooperations

Energy only market

- 3rd package
- Strengthen ACER & ENTSOE
- Electricity market design (Customer participation, RES flexibility...)
- Interconnectors
- Capacity markets
- Demand side response
- Network codes

EnergyEfficiency

- Concentration on traffic & buildings
- Alternative fuels

ClimateChange

- ETS reform
- Climate aims 2030
- Market integration of RES
- National conveying systems in accordance to EU law

R & D

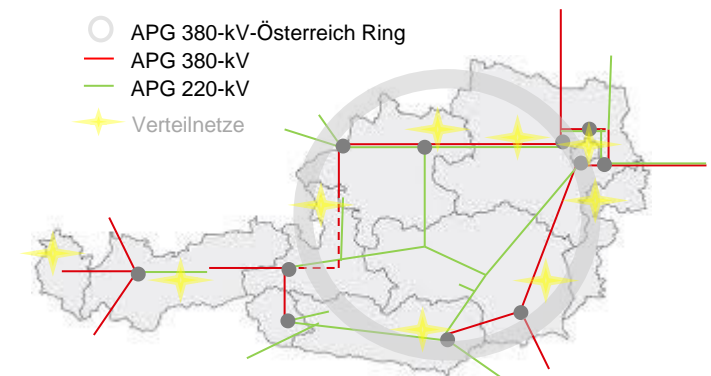
- Energy-Research
- Update SET plan
- R & D agenda for traffic
- Juncker Plan

Austrian Power Grid AG



- Transmission System Operator
- balancing production & demand
- Grid enforcement & development
- secure & reliable system operation

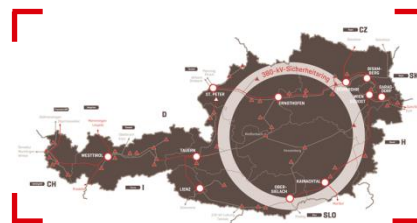
- 3.500km transmission grid, high voltage (from 110-kV)
- 450 employees
- 61 substations & 500 switchboards
- € 1.155 Mio. asset value
- € 150 Mio. - € 200 Mio. investments per year
- owner: 100% Verbund, based on § 28 EIWOG ITO



TSO's role in the electricity system

Security of supply

- ✓ 24/7/365
- ✓ electricity in highest quality & quality
- ✓ relevant location factor



Market Plattform

- ✓ forecast RES
- ✓ power trading & trading system

Technical Integration RES

- ✓ 2016: + 1 GW PV
- ✓ 2016: + 4 GW Wind

Economic boost

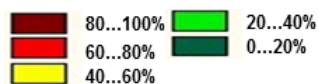
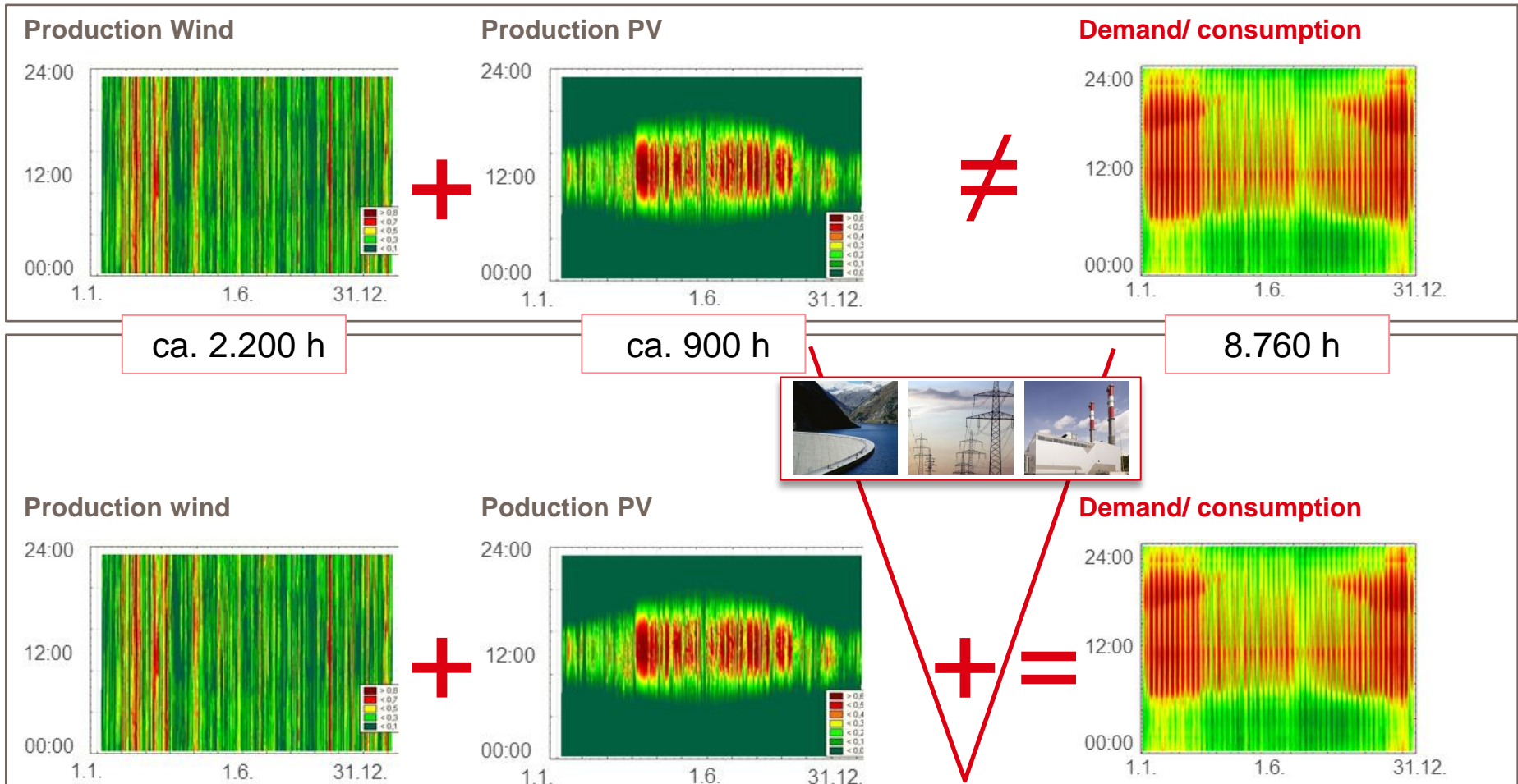
- ✓ 10 years: 2,0 Bill. €
- ✓ Value added: 1,5 Bill. €
- ✓ employment effects: 26.000
- ✓ 2.600 employees/year

Operational challenges



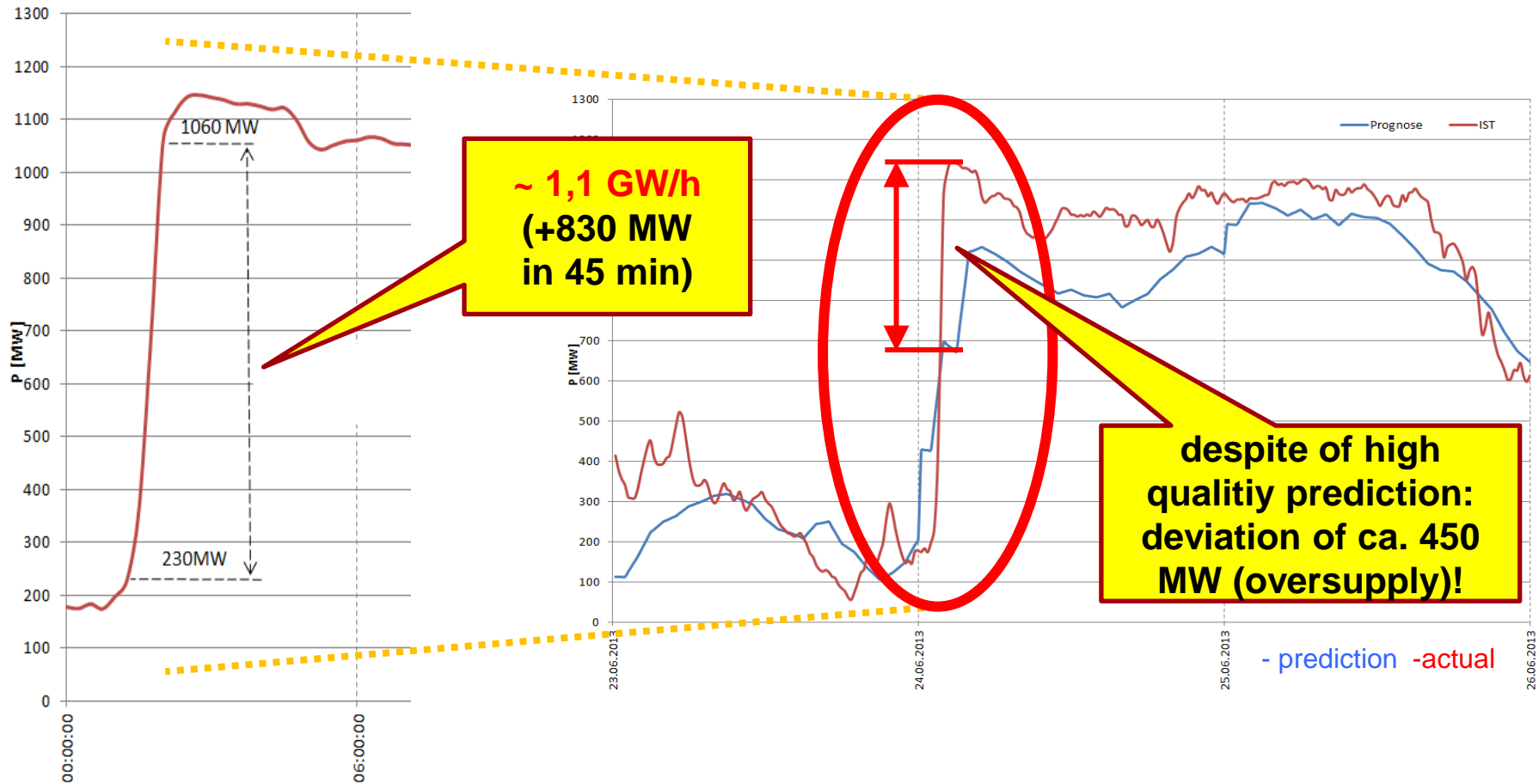
- RES: supply, integration, prediction
- Market Schedules/ Plattform
- Transformation of the grid because of the energy change

Electricity future: Supply & demand



High volatility because of RES

z. B. erratic increase of wind production (24.06.)



Database Forecast RES (4 main sources)



PRODUCER

Individuell formats: xml, mscons, xls, csv, etc.; telephonic informations



- Production Values
- schedules
- meteo data
- disposability

DSO

Counted Values/ Meter data



Datahouse

Selected TAWES-stations

Measured Data

- Wind speed
- Wind direction
- Temperature
- Global irradiance
- rainfall



Meteo Austria (ZAMG)

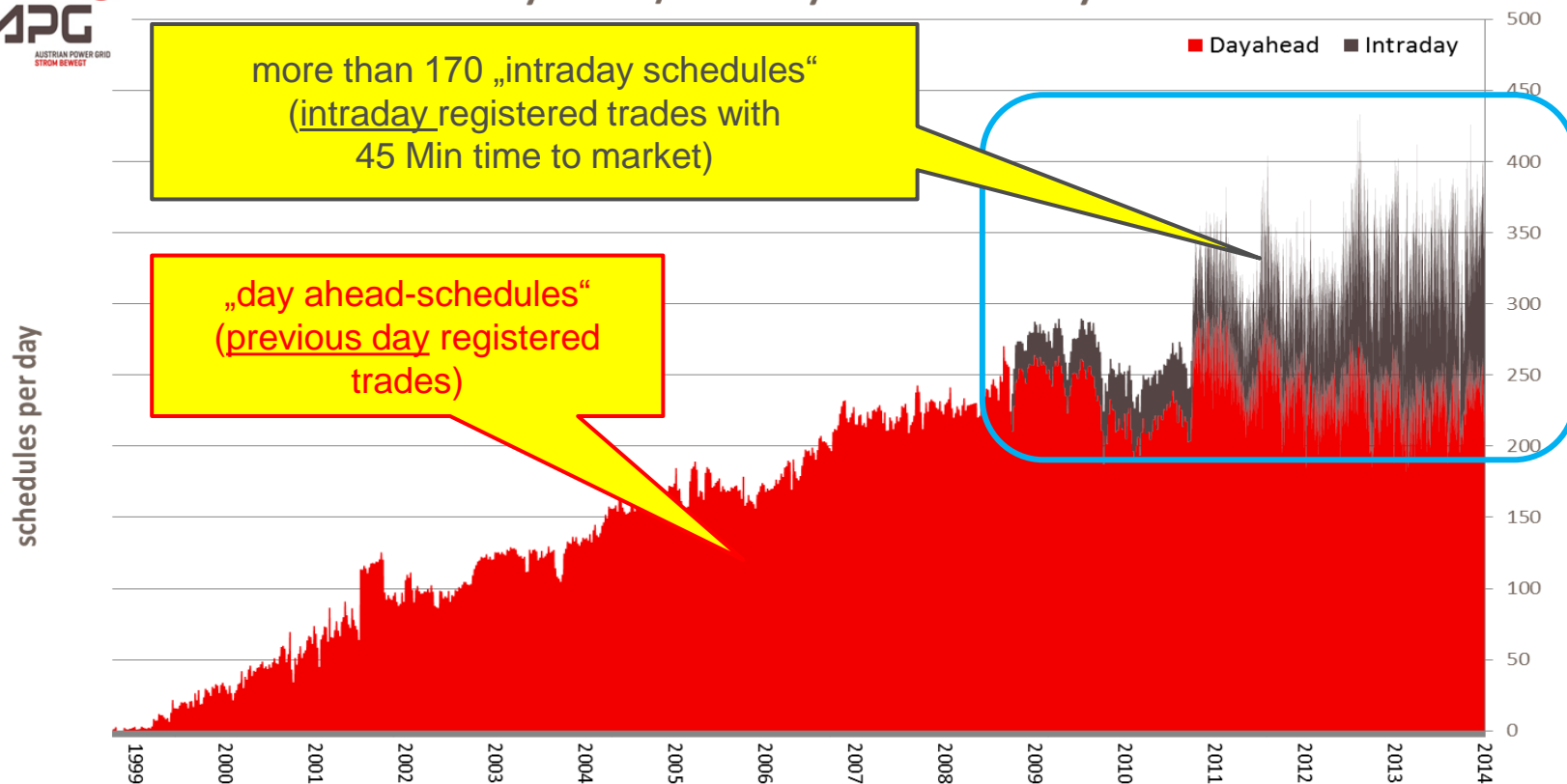
Prediction Data

- Wind speed
- Wind direction
- Temperature
- Global irradiance
- rainfall



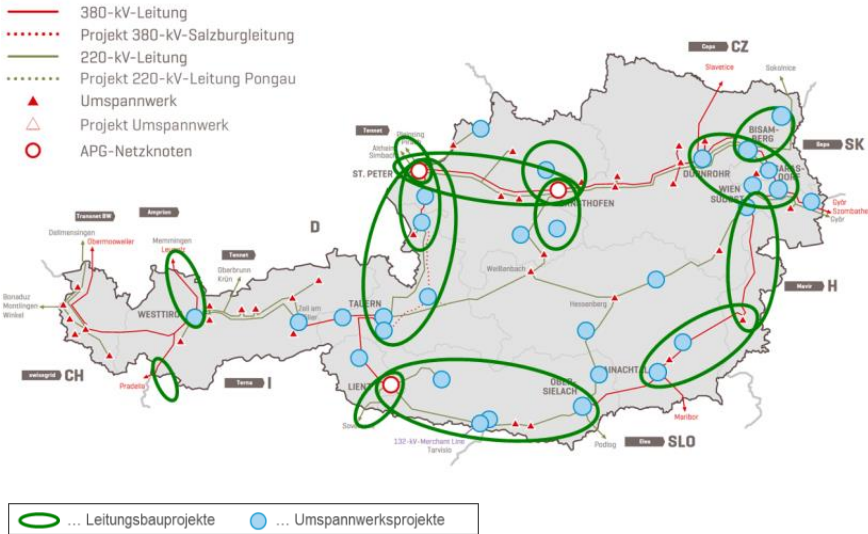
Increase crossborder trades („schedules“)

dayahead / intraday-schedules daily



- In total more than 430 schedules per day to be executed (day ahead+intraday)
- Percentage of „Intraday-schedules“ increasing (more than 170 per day) → permanent recalculation of the grid security necessary

APG Network Development Plan (At) 2014 (§37 EIWOG)



- **Timeline 2015-2024**
- **rd. 2,0 Bil. € Investments until 2024**
- **46 projects**
 - **New Lines/ reconstructions:** ca. 370 km new + rd. 610 km upgrades/rebuildings
 - **Power transformers:** ca. 45
 - **New and expansion of substations:** ca. 170 new control panels 380-/220-/110-kV

Austrian NEP:

- yearly
- Per verdict/ E-Control Austria
- Defines the most value projects for the austrian SoS (next 10 years)

<http://www.apg.at/de/netz/netzausbau/Netzentwicklungsplan14>

European Infrastructure Package (EIP)

Projects of Common Interest (PCI)

- Grids > 220-kV + PSP
- criteria
 - o RES integration
 - o security of supply
 - o transnational interconnectors
 - o market Integration
- speeding up permitting procedures
 - o Vorrang von PCI
 - o **OneStopShop**
 - o **duration: max. 3,5 years**
 - o public acceptance
- European coordinator
- central national administration

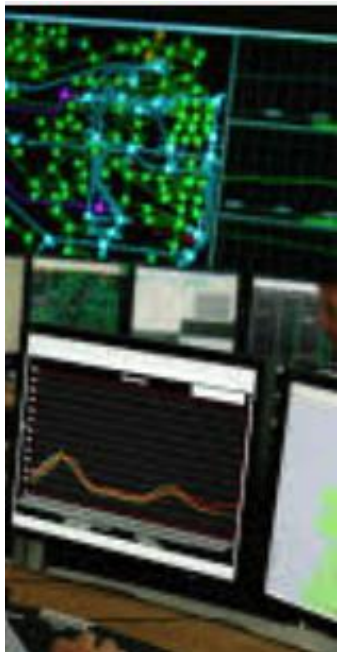
TIMELINE

- | | |
|------|---|
| 2015 | Austrian law
operational handbook
European monitoring plattform |
| 2015 | PCI List II |



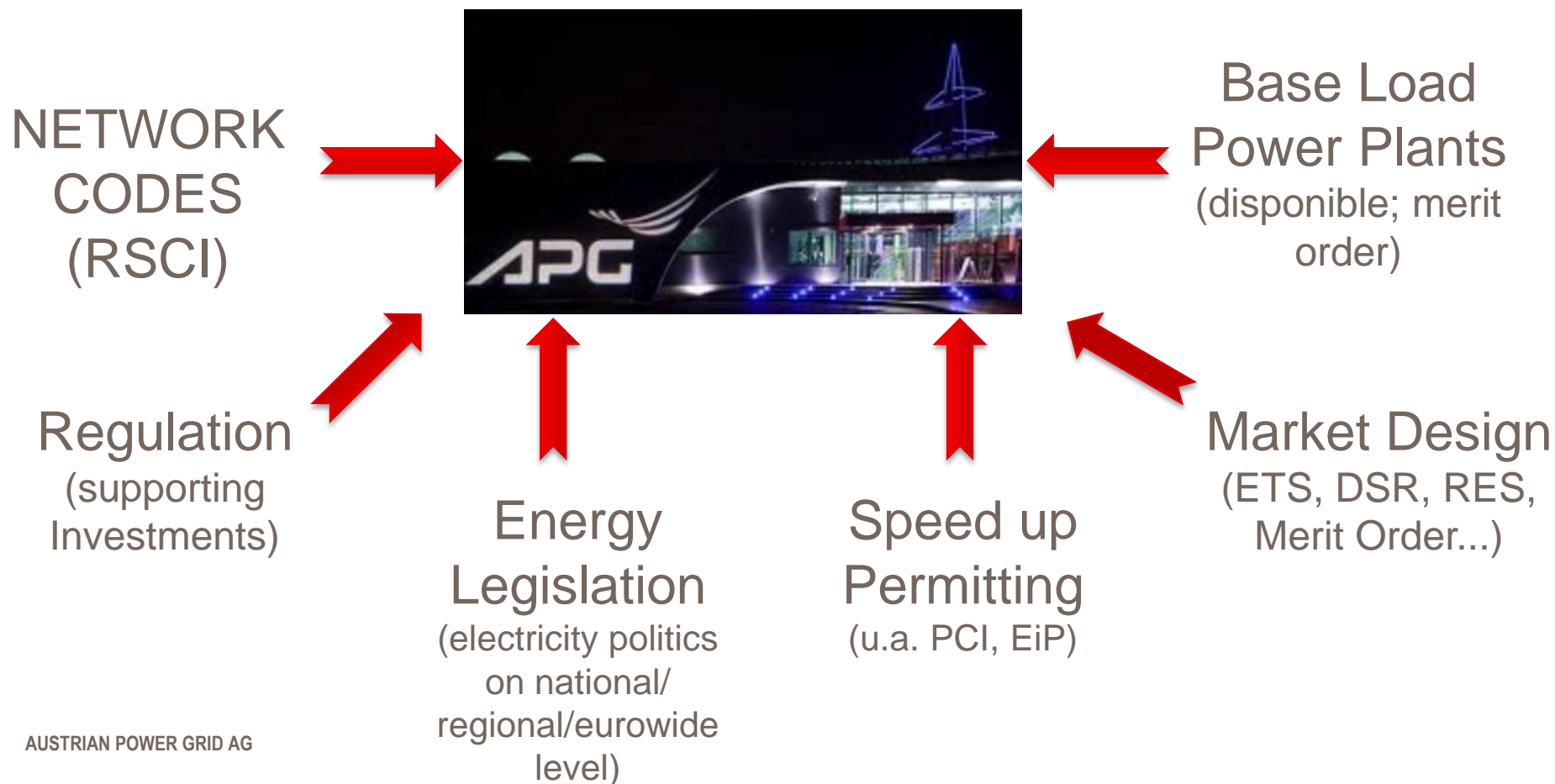
- St. Peter – Tauern
- St. Peter – Isar
- Lienz – Veneto
- Lienz – Obersielach
- Westtirol – Zell/Ziller

Role of TSO in Energy Union: Heart



- **TSO = crucial cog** (interconnecting energy markets)
- **Key role of TSO:** implementation of the European Union's Third Energy Package: **creating an Internal Energy Market**
 - Facilitating **cross-border exchanges**
 - **integrating RES** into the power supply (at once: energy network operates safely and reliably)
 - **Collaboration between TSOs** is therefore vital for guaranteeing that power is delivered where it is needed, when it is needed (bsp: market coupling)

Daily influences on APG/ grid operating





Energy Union – TSO Perspective

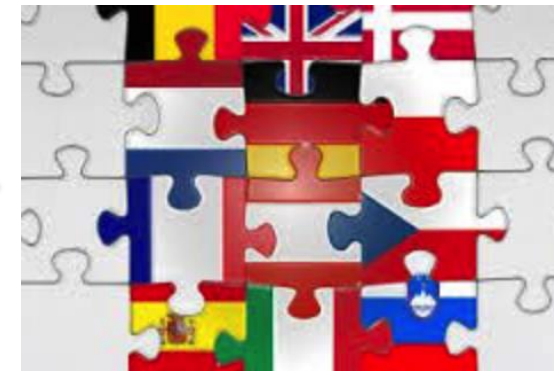


1. **10% interconnection target** (AT 28%)
 - ✓ reducing electricity price levels in Europe
 - ✓ strengthen competitiveness
 - ✓ RES integration (market/ supply)
2. **Regional Cooperation** (RSCI etc./ TSC, CWE, CEE; TSO/DSO; TSO-TSO)
3. **Finishing & operating Networkcodes** (3rd package)
4. **Energy only market**: systemic integration & flexibilization of the system (DSR, Prosumers, RES, new stakeholders...)
5. **Enfasten permitting procedures**/ PCI & Electricity highways
6. Harmonization of energy politics by regulation (not politics!)

Crucial tasks in general...

1. **Security of supply** during the systemical change
2. **Speeding up permitting procedures** to fullfill the needs of flexibilazation/ higher capacities and more stakeholder in the electricity market
3. **Systemical approach**
4. **Proportion Environmental law – infrastructure law**
5. **Political & Public acceptance**
6. **Data Management – Data security – Smart Grids**

Energy Union – playing fields – obstacles



Conclusion



...would need

- an **eurowide committment** („german comittment“ decision atomic face out)
- **centralized energy policiy & power**

...to manage the energy change! The energy union action plan may be not enough...



THANK YOU FOR YOUR ATTENTION!

**APG AG, Mag. Christoph Schuh (Head of Brussels office)
Budapest, 7.10.2015**

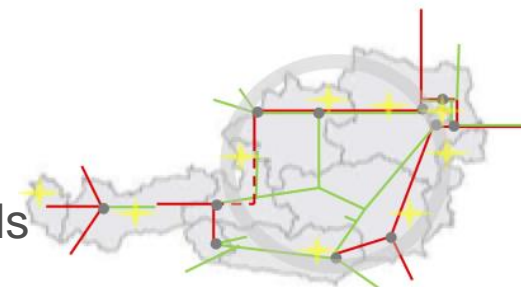
Thank you for your attention!



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