

# European Conference on Security Research

## Mats Fagerlund on security of networks and beyond

Berlin, 26.03.07

# I am responsible for the grid business within Vattenfall Europe

- o Guarantee stable and save operation of transmission grid (~system security)
- o Guarantee free access of energy feed-in
- o Cross-border energy transport

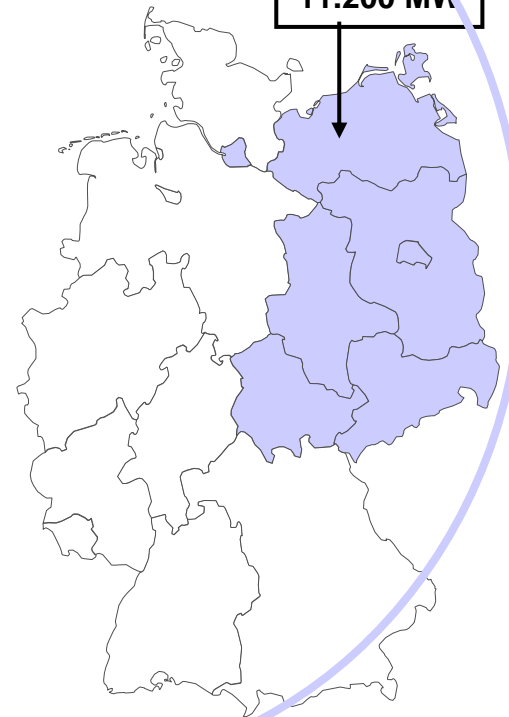
HEAD  
Fagerlund

BU  
Transmission

MW (peak)	11.200
km	9.500
Transf. stations.	68
EEC TWh	15,4

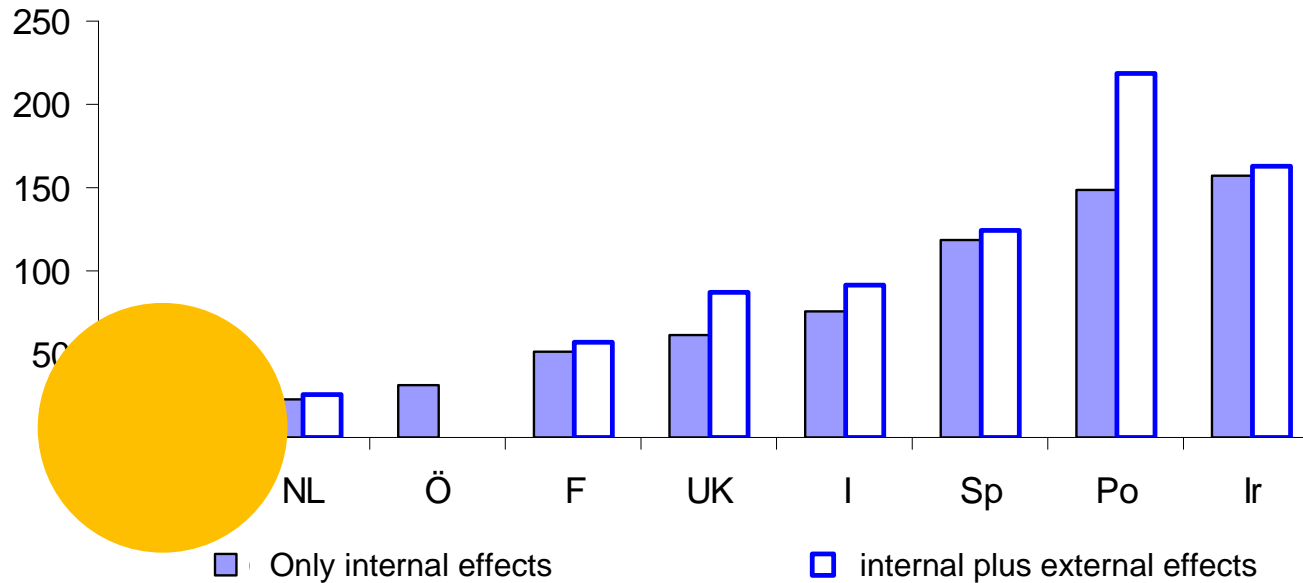
VE Transmission

TSO  
11.200 MW



# We are benchmark

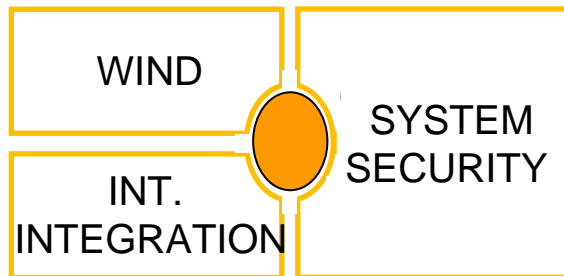
Duration (min.) of total interruption per customer



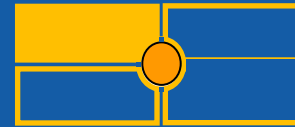
Source: Council of European Energy Regulatory (CEER); Autorità per l'energia elettrica e il gas, Rom; Office of Energy Regulation (DTe), The Hague; E-Control, Wien; Verband der Netzbetreiber (VDN) beim VDEW, Berlin

# Allianz predicts over the next years a significant increase of short term disruptions – plus frequent blackouts

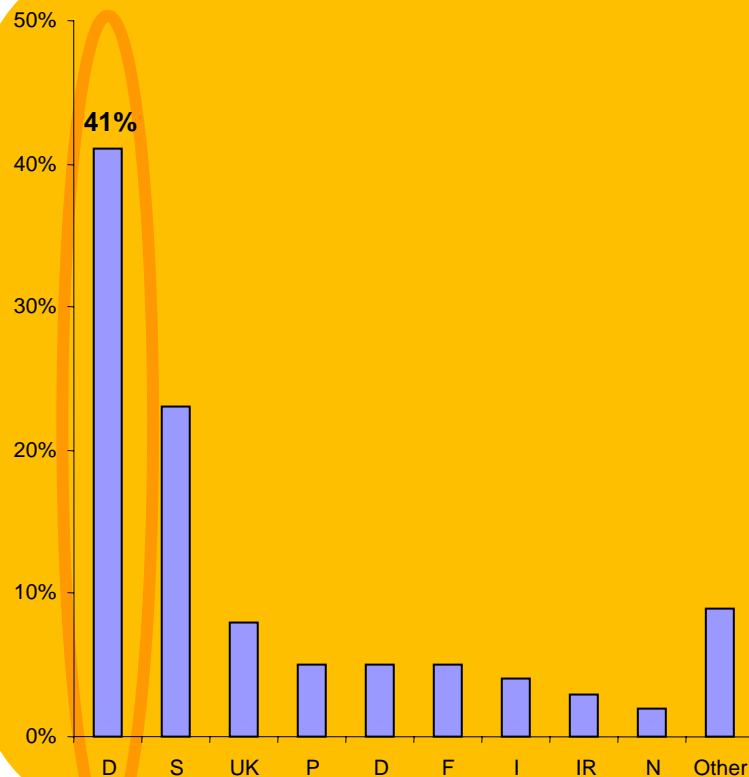
## Main drivers for disruptions and blackouts according to Allianz



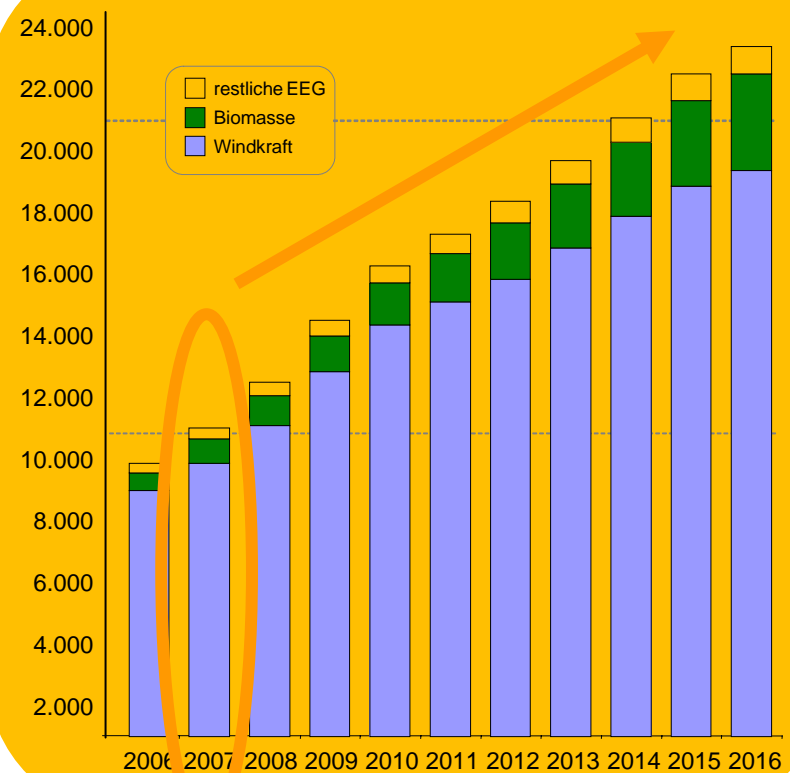
# Today and more so tomorrow wind drives our investments, our business model and our cost side



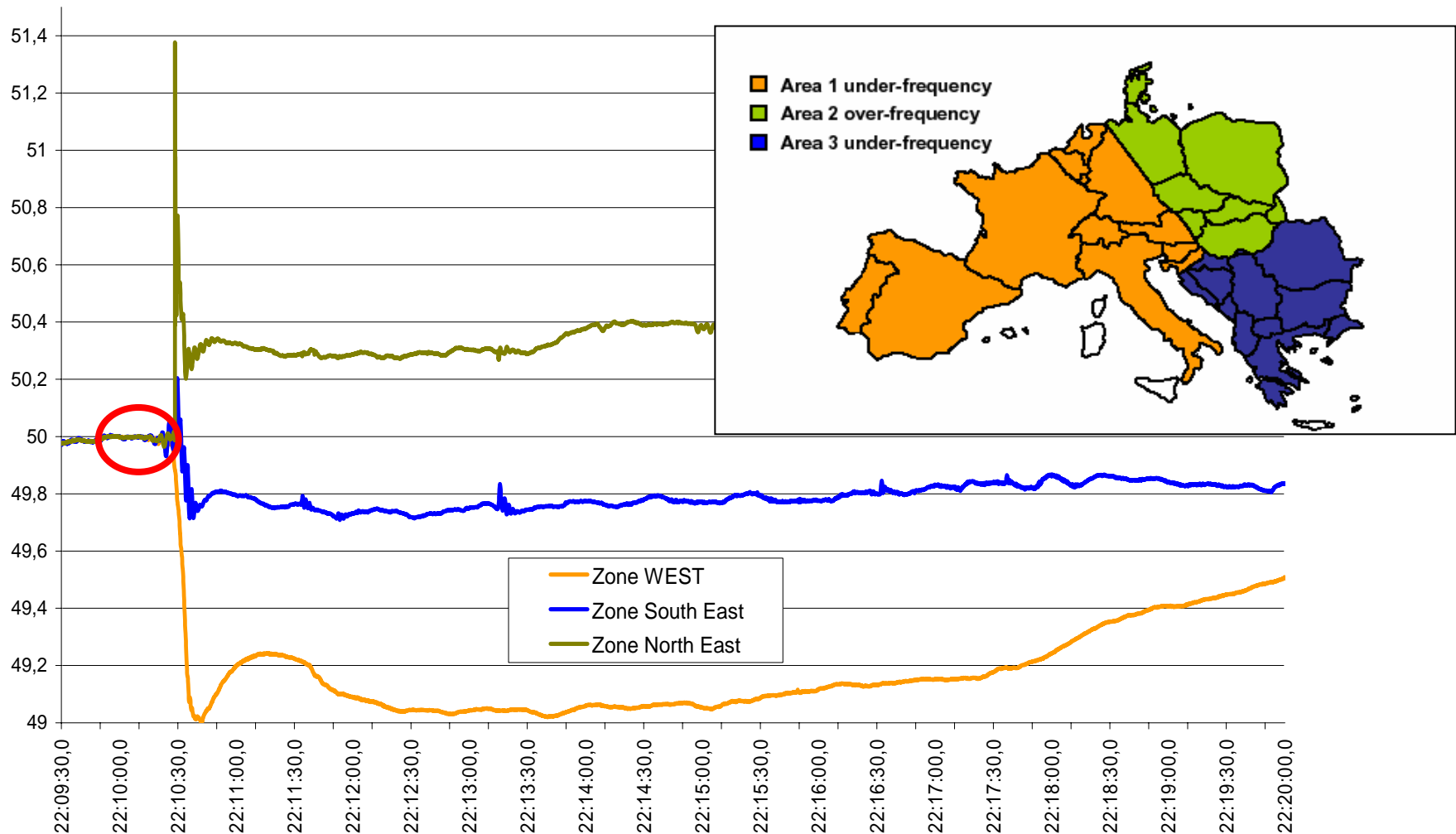
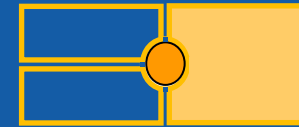
## Share of installed windpower in Europe



## Development of windpower within Vattenfall control area

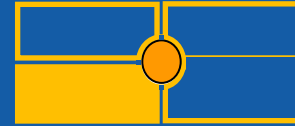


# System Security is key for Transmission networks - we are benchmark leader today

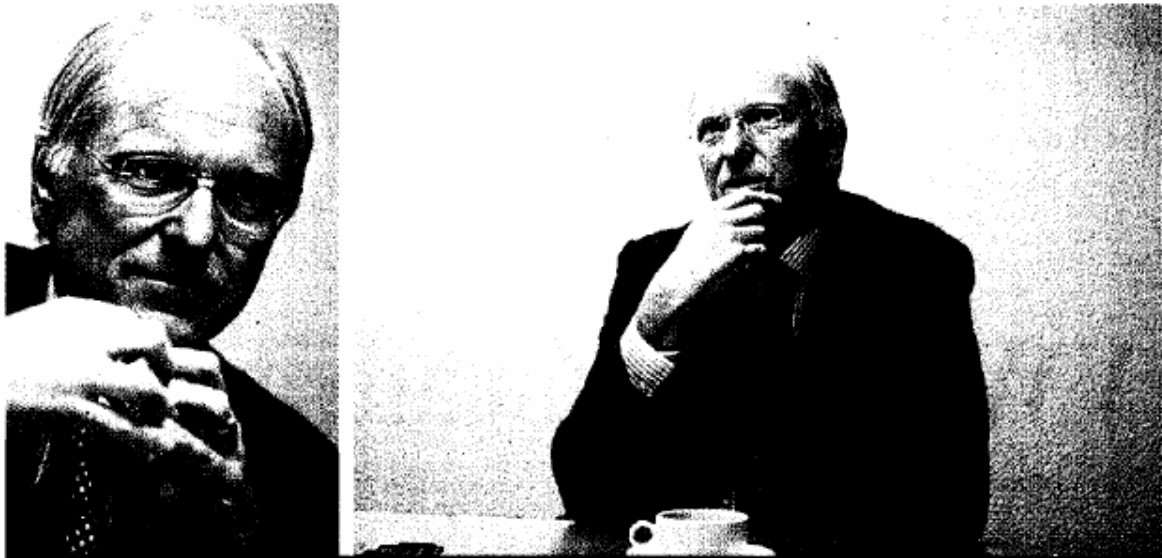


Source: UCTE, 2007

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## VE is proposing a strong European solution



INTERVIEW

### „Gut, dass die Gewinne st

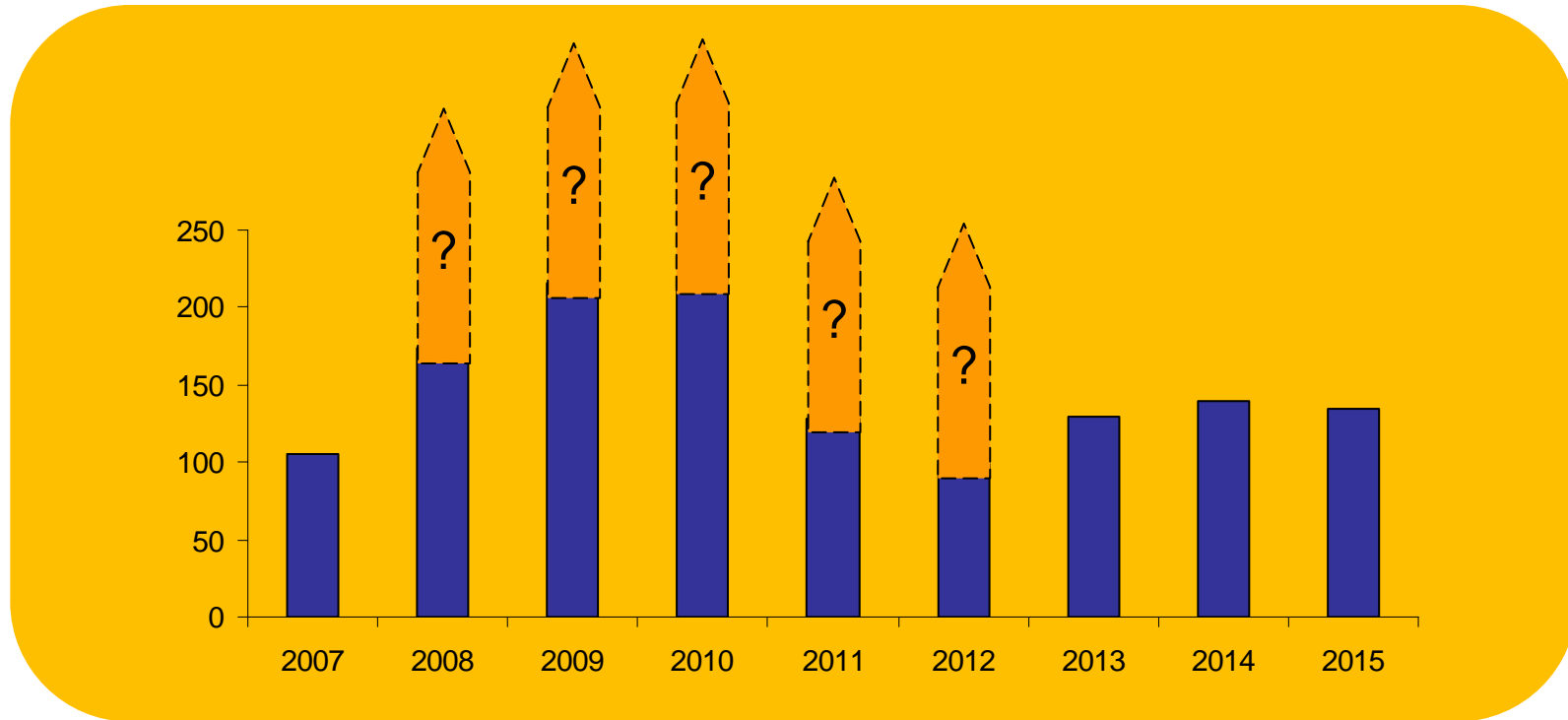
Hohe Erträge der Stromkonzerne seien nötig, um die Versorgung zu sichern, sagt Chef des schwedischen Energiekonzerns Vattenfall fordert ein europaweites

**D**er Vorstandsvorsitzende des schwedischen Stromversorgungskonzerns Vattenfall, Lars Josefsson, plädiert für die Einführung einer unabhängigen Institution, um die Hochspannungsnetze in Europa zu betreiben. Vorbild dafür könnten die Independent System Operators in den Bundesstaaten der USA sein. „Das Führungsgremium dieses Netzbetreibers würde von der Stromwirtschaft besetzt werden und besäße die volle Kontrolle über das Hochspannungsnetz in Europa“, sagte Josefsson der FTD. „Das ist notwendig, um zu einem wirklich einheitlichen europäischen Strommarkt zu gelangen.“ Flankiert werden solle dieser Netzbetreiber von einer europäischen Regulierungsbehörde.

## Allianz Report: “lack of investors for new investments due to low returns in the 90’s”<sup>1</sup>



### Development of Investments in TSO business



Investments TSO (in m€)



continuous investments into classical TSO activities (some 100m€ p.a.)



Add on investments of some 1,4 bn€ until 2011 (at least) from offshore grid activities due to Infrastrukturplanungsbeschleunigungsgesetz)

<sup>1</sup> Source: Allianz Zentrum für Technik GmbH; Report – Risiken der Stromversorgung, 2006, S. 3: “Fehlende Kapitalgeber für Neuinvestitionen wegen niedriger Renditen in den 90-er Jahren”

## Let me sum up



### Challenges

Renewable Energy

System security

International integration

Lack of capital supplied for new investments

### Answers

- a. **State-of-the-art bottleneck management**
- b. **TSO cooperation**  
(new control area management)

1. **European energy markets** on larger scale
2. **Extend and reinforce networks**
3. **Massive investments**  
– but incentives are needed

*short term*

*long term*