The Energy Regulatory Office

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Updates on smart meter preparation in Poland

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Smart Metering Central and Eastern Europe 2011, Warsaw, May 17 - 18, 2011

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Agenda

1. Review of progresses of the last 12 months and outlining key challenges and developments

2. Defining the business initiatives for metering

3. Identifying key challenges for meter deployment

4. Review of key pilot projects, analysis of customer responses, business process improvements and demand control outcomes

1. Review of progresses of the last 12 month and outlining key challenges and developments

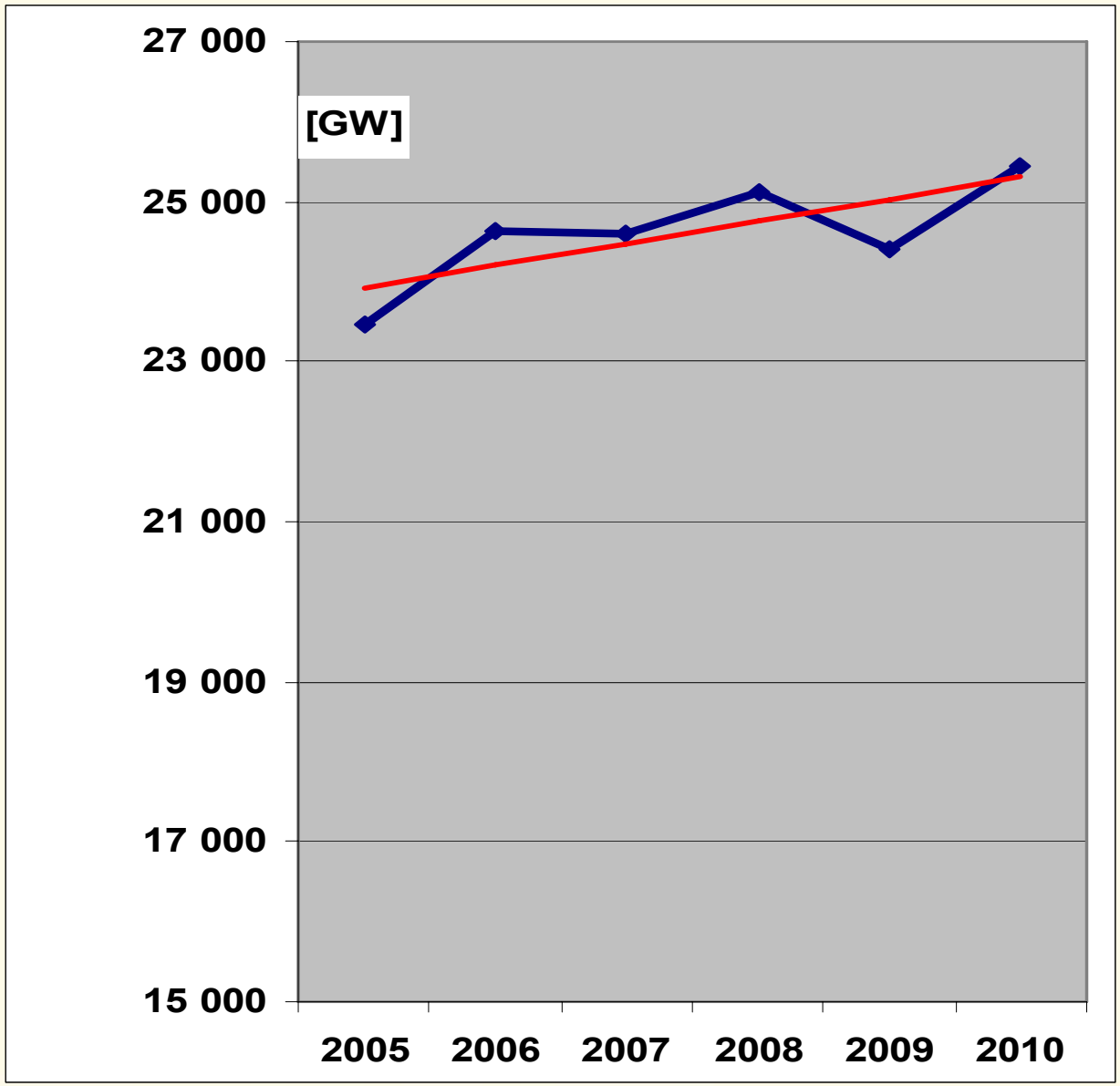
1. General situation:
   - Demand curve dynamics
   - Central power plant investments
   - RES connection dynamics
   - Network investment dynamics

2. Regulatory initiatives
   - Declaration
   - Education
   - Co-operation

3. Government initiatives
   - Legal initiatives of Ministry of Economy
   - Supporting structures

1. General situation:

- Demand curve dynamics:



1. General situation:

- Central power plant investment: over 11 GW of total value

Investment Project	Type of investment	City, voivodeship	Planned year of generation start
Gorzów (PGE)	new peak block 126 MW, gas	Gorzów, Lubuskie	2013
CHP Siekierki (Vattenfall)	new CHP block 480 MW, hard coal	Warszawa, Mazowieckie	2014
Kozienice II (ENEA)	new power plant, up to 1000 MW, hard coal	Kozienice, Mazowieckie	2014
Opole (PGE)	block no. 5 and 6 - up to 1600 MW, hard coal	Opole, Opolskie	2014-2015
Jaworzno III (Tauron)	new block, 900 MW, hard coal	Jaworzno, Śląskie	2015
Ostrołęka (Energa)	new block, 1000 MW, hard coal	Ostrołęka, Mazowieckie	2015
RWE + Kompania Węglowa	new power plant, 800 MW, hard coal	Tychy, Śląskie	2015
Rybnik (EdF)	block 900-100 MW, hard coal	Rybnik, Śląskie	2015
Stalowa Wola	new block, 400 MW, gas	Stalowa Wola, Podkarpackie	2015
Blachownia (Tauron)	new block, 900 MW, hard coal	Kędzierzyn, Opolskie	2015
Lublin (PGE)	new power plant, 2 x 800 MW, hard coal	Lublin, Lubelskie	2015-2016
Turów (PGE)	block no. 11, lignite	Bogatynia, Dolnośląskie	2016
ZA Puławy + Vattenfall	new power plant, up to 1400 MW, hard coal	Lublin, Lubelskie	2016-2017

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- Central power plant investment: over 11 GW of total value

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1. General situation:

- Central power plant investment:

over 11 GW of total value ?

Real questions:

CEZ, RWE and Vattenfall – stopped investments

Enea, TAURON – delay related to the changing of shareholders structure

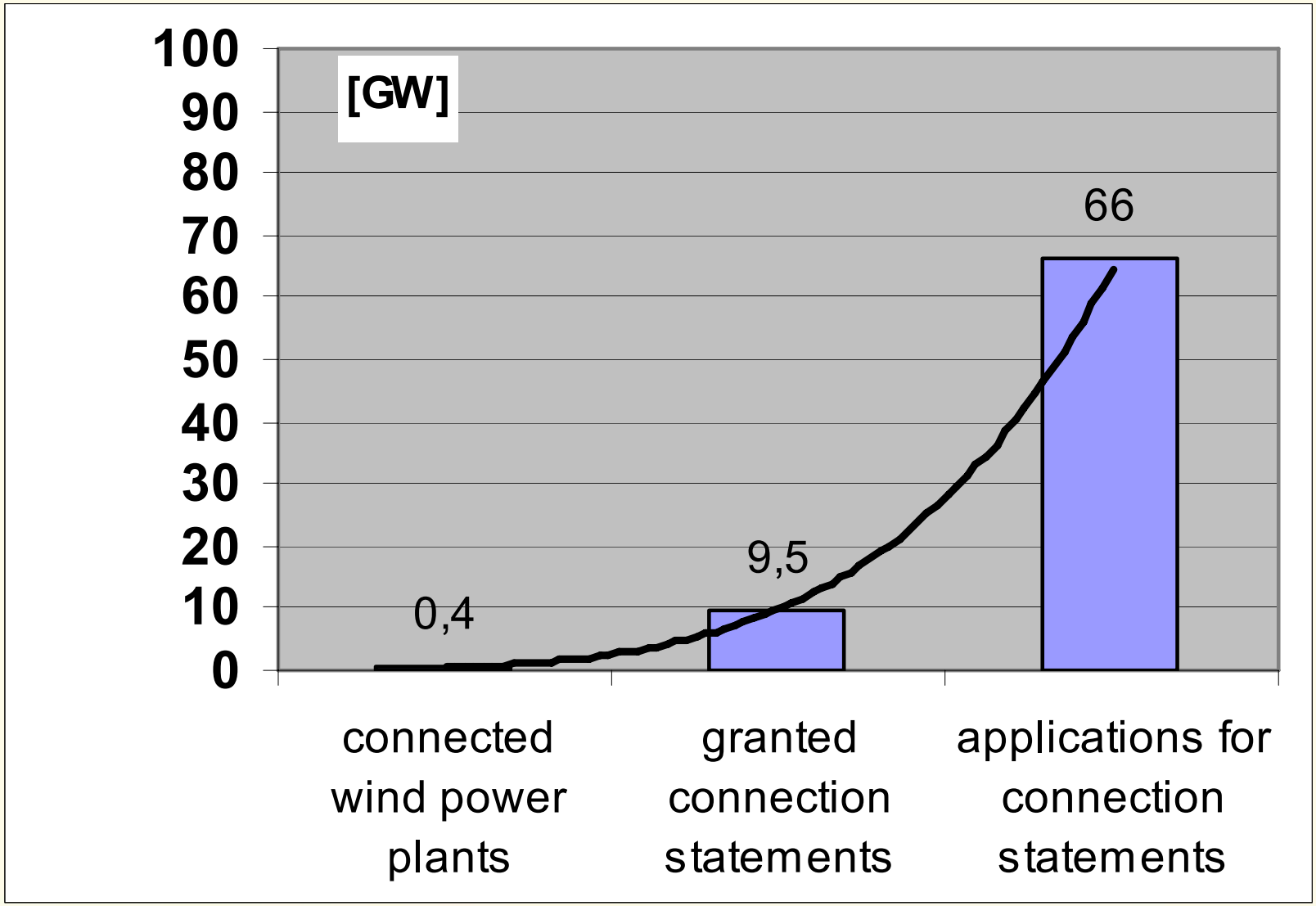
PGE – possible gap between declarations and realisation

Conclusion: app. 50% of planned investment may be a „paper investment" only*

*) http://energetyka/wnp.pl

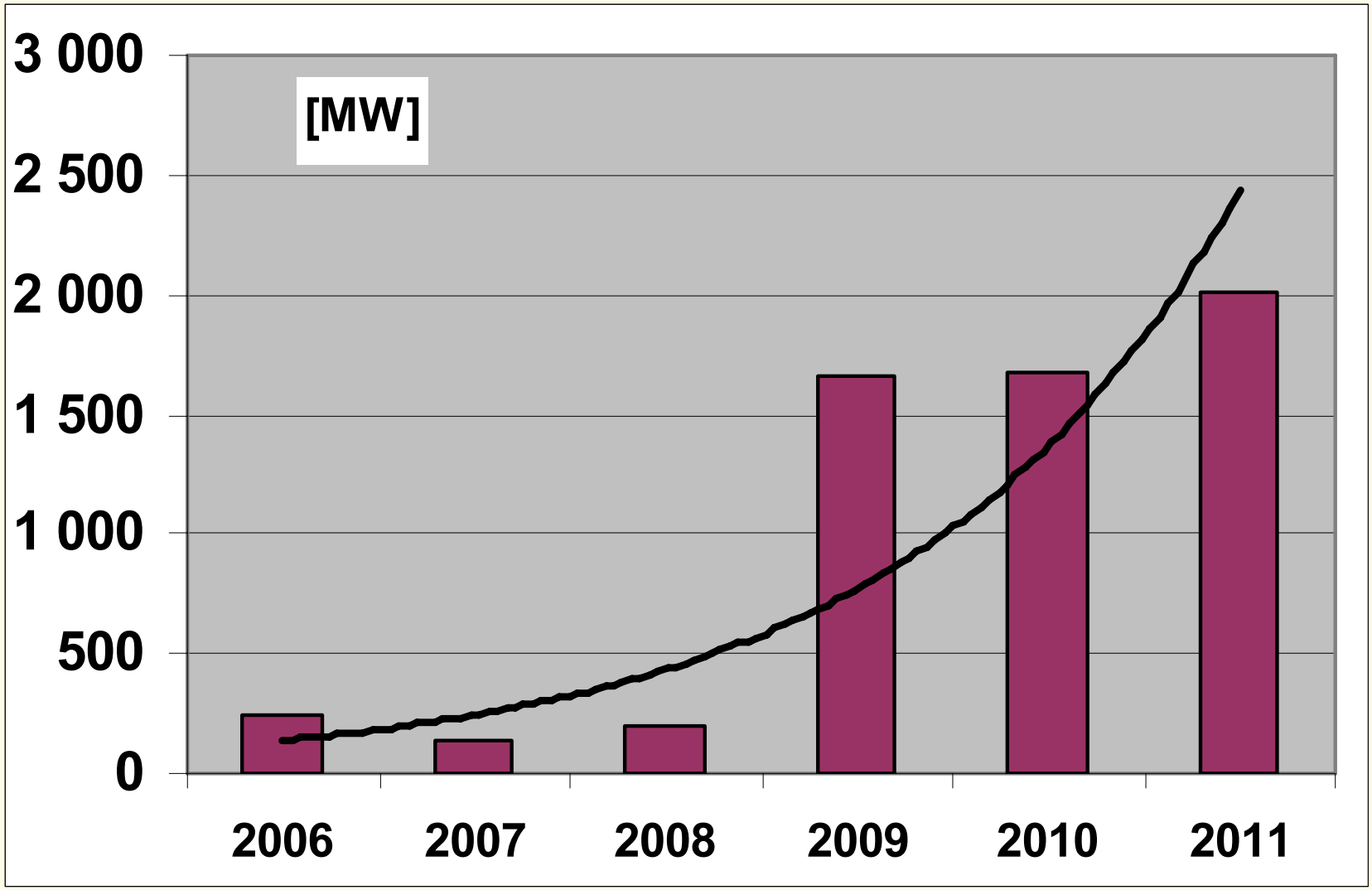
1. General situation:

- Current state of RES connections to TSO



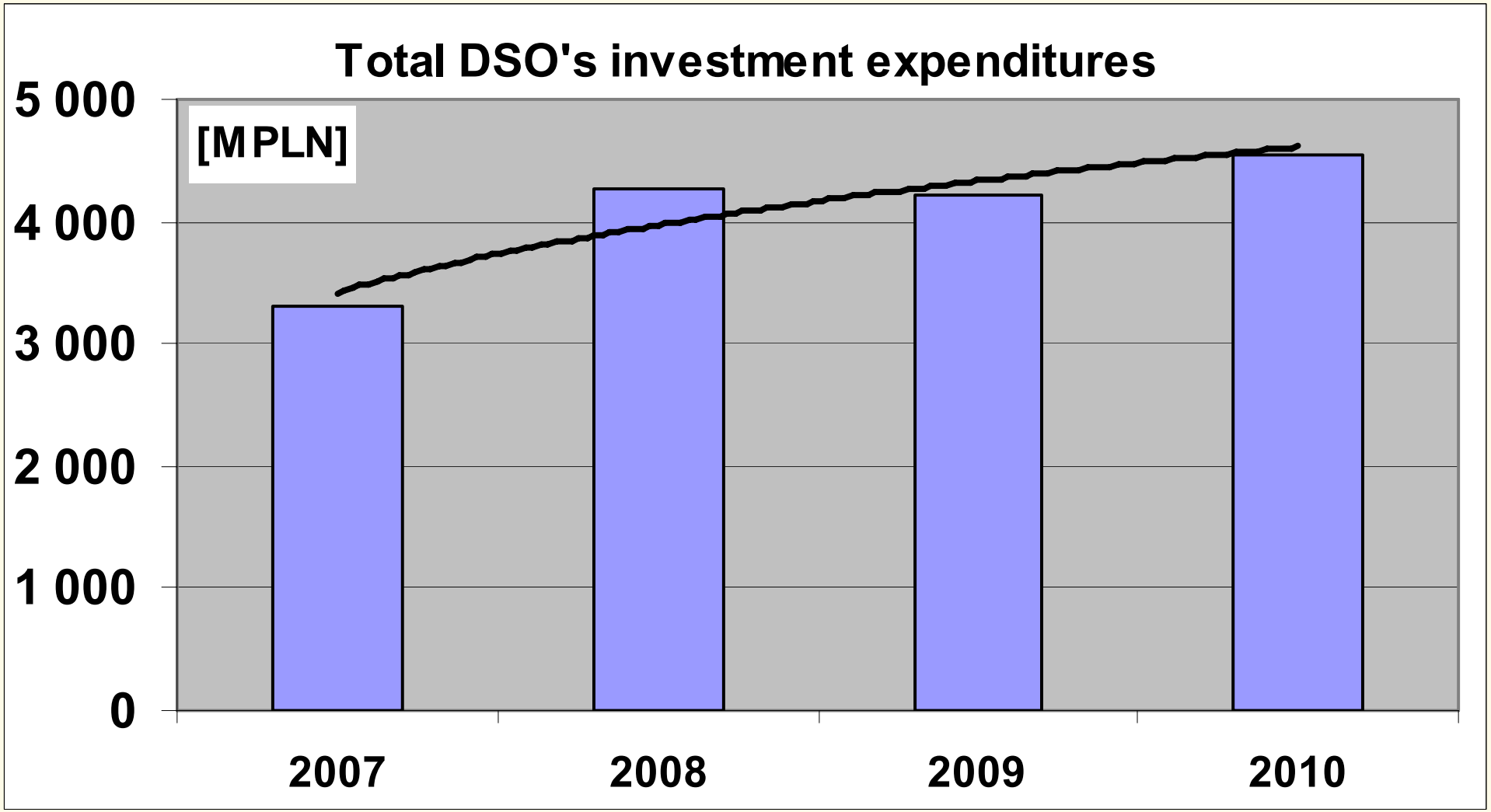
1. General situation:

- Dynamics of RES & CHP connections to DSOs



1. General situation:

- Network investment dynamics



2. Regulatory initiatives

- **Declaration → Requirements**
- **Education**
- **Co-operation**

2. Regulatory initiatives

Regulatory Position

concerning the requirements of Smart Metering Smart Grid Ready into the Polish power system,

part 1, related to DSO investment – under public discussion, ended on May 13

The next parts, related to:

- **metering data market structure and Metering Data Independent Operator,**
- **HAN and prosumers,**
- **regulatory incentives and**
- **legal rules**

– TBD up to the end of the year

2. Regulatory initiatives

Education concerning:

- the ERO website,
- press releases and press conferences
- content-related conferences
- ERO personnel activity on many other conferences and workshops

2. Regulatory initiatives

Co-operation related to :

- Transmission System Operator,
- Distribution System Operators
- Branch Chambers of Commerce
- Universities of Technology
- 19.11.2010 - ERO President signs Declaration of Creating the National Technological Platform on Energy

3. Government initiatives

- **Legal initiatives of MoE:**

  Energy Efficiency Act, signed by President of Poland and published on 10 May 2011

- **Supporting organisations:**

  Advisory Team for Smart Grid Implementation

2. Defining the business initiatives for metering

1. PSE – Operator (Transmission System Operator)

2. ENERGA – Operator (one of Distribution System Operators)

3. KIGEIT (Polish Chamber of Commerce for Electronics and Telecommunications)

4. PIIT (Polish Chamber of Technology of Information Technology and Telecommunication)

5. IGG (Chamber of the Natural Gas Industry)

6. Consortium Smart Power Grids Polska

7. Cluster 3x20

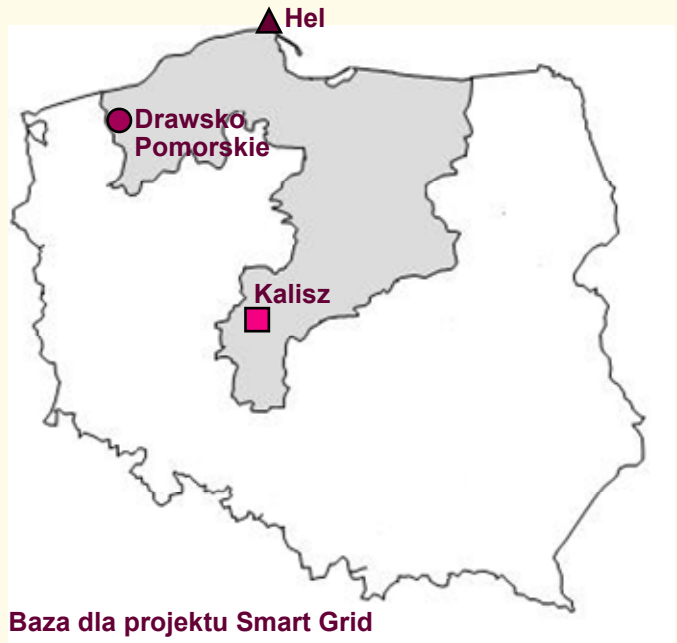
8. ….

Ad 1. PSE Operator – Smart Grid Area

- Smart Transmission Network
- Dynamic Line Rating Monitoring System
- Demand Side Response Programs
- Distributed Energy Resources Management
- Smart City/Smart Region Cooperation
- Smart Metering Data Management

Ad 2. ENERGA - Operator

Wybrane lokalizacje dla Etapu I wdro enia AMI w EOP



Weryfikacja	Baza dla projektu Smart Grid
Charakter zabudowy	Zabudowa mieszana
Orientacyjna liczba liczników	ok. 28.500
Wybrana lokalizacja:	**Hel, Władysławowo**

Weryfikacja	Efektywność komunikacji WiMax
Charakter zabudowy	miejska, duże zagęszczenie
Orientacyjna liczba liczników	ok. 50.000
Mo liwe lokalizacje:	**Kalisz**

Weryfikacja	Działanie technologii PLC na nN i SN, kwestii logistyki wymiany liczników
Charakter zabudowy	wiejska
Orientacyjna liczba liczników	ok. 27.500
Mo liwe lokalizacje:	**Drawsko Pomorskie**

Wybór trzech ró nych lokalizacji umo liwi weryfikacj ró nych technologii komunikacyjnych rekomendowanych do realizacji AMI

Source: ENERGA – Operator SA, Stan wdrożenia i perspektywy rozwoju sieci inteligentnej, Sejm RP, Warszawa, 16 marca 2011

Ad 3. KIGEIT (Polish Chamber of Commerce for Electronics and Telecommunications):

fully involved into the activity of distributed generation oriented industry,

supported the mentioned above Regulatory Position concerning the requirements of Smart Metering Smart Grid Ready

Ad 5. IGG (Chamber of the Natural Gas Industry):

Position of gas sector is: „to wait and observe" and

„to be separate, away from power sector"

Real danger of parallel, redundant investment (unefficiency)

Ad 7. Kluster 3x20

focused on the independent prosumers,

local efficiency improvement only

3. Identifying key challenges for meters deployment

1. Imbalance of the cost and benefits – the need of the regulatory tools activation

2. Limitation of new meter's functionality – the lost of potential benefits

3. Proper structure of data market – status of independent data operator

4. Current lack of common communication standard – danger for interoperability

4. Review of key pilot projects, analysis of customer responses, business process improvements and demand control outcomes

1. ENERGA – Operator: pilot project

2. Pilot „anti-projects" prepared by some other DSOs

3. Presence of mental (grey business related ?) barriers inside energy sector and a part of sector supporting establishement

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Future activities of ERO

1. Publication of Regulatory Position, mentioned above

2. Preparing of the next parts of Regulatory Position, first of all related to:

- Incentive tools

- HAN

- Data Market (Independent Data Operator position)

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Crucial problems to solve - one year later

1. Targets and priorities definition - solved

2. Defining of proper tools to achieve targets – solved, under description

3. Functionality of overall system and its certain elements – partially solved

4. Defining of common communication protocols: no solution already
„competition" between: - SGOP,
- IDIS,
- EBIX,
- DLMS,
(all of this under Mandate M441 umbrella !)

5. Education of entity employees and customers – TBD, the biggest challenge

Conclusions:

Thank you for your attention

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