Russian power sector: problems and opportunities
Enel experience in Russia

Dominique Fache
Chairman of Board, Enel OGK-5

St. Petersburg, 23 September 2011

Enel in main figures*

- 40 Countries, 4 Continents
- Total net installed capacity: 95 806 MW
- Total net installed renewables: 34 325 MW
- Total production: 285.5 TWh /year
- Length of power lines: 1 810 950 Km
- Final energy distribution: 430.5 TWh/year
- Customers: 60.9 mln
- Investments: 30.9 bln EUR
- Human resources: 76 007 employees
- Shareholders: 1.5 million
- EBITDA (2010): 17.5 bln EUR
- Net income (2010): 4.4 bln EUR

*Numbers as of 30.06.2011

Energy facilities

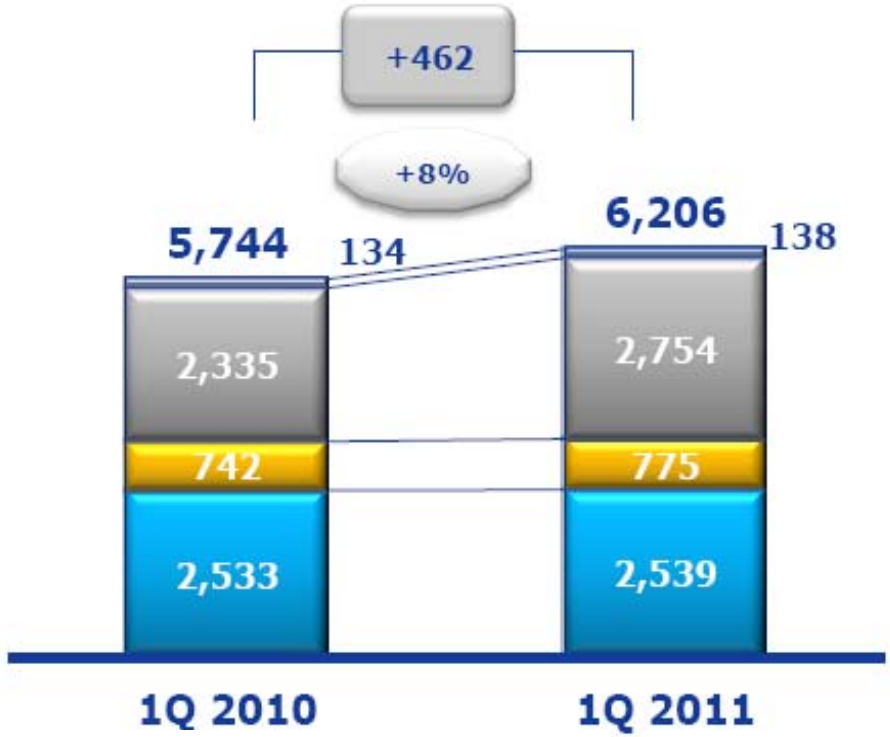
Representative office

ENERGY IN TUNE WITH YOU.

Enel Green Power: Net installed capacity MW (1Q 2011)

By geography

By technology



Enel
ENERGY IN TUNE WITH YOU.

Enel presence in Russia

Vertical Integration in Russian Energy Sector

Upstream gas → **Power generation** → **Energy supply**

19.6% of SeverEnergia

- Gas fields in the north of Western Siberia
- Reserves over 900 mln b.o.e, full production at 28 bcm/y
- Covering more than 50% of demand of Enel OGK-5's gas-fired plants

56.4% of Enel OGK5

- Core asset of Enel's vertical chain in Russia
- 9.6 GW gross capacity, with balanced mix (50% gas and 50% coal)
- 42,8 TWh generated in 2010

49.5% of RusEnergoSbyt

- Largest independent retail power company in Russia
- More than 48,9 TWh sold in 2010
- Strong regional reach with 48 offices and 9 branches
- Major supplier to Russian Railways (15 year long-term power supply contract)

Enel in Russia in figures:

- Investments in assets (2007-2010): ~ 3 bln EUR
- Investments in business operations (2007-2010): ~ 1 bln EUR
- Total investments (2007-2010): ~ 4 bln EUR
- Investment plan (2011-2015): ~ 2 bln EUR
- Headcount (2010): ~ 4 300 employees

Enel expertise and technology in Russia

CCGT-410 MW at Sredneuralskaya PP, Enel OGK5

- Installed capacity: 410 MW
- NTP: 3Q 2008
- COD: 3Q 2011
- Investments: ~ 380 mln EUR

CCGT-410 MW at Nevinnomysskaya PP, Enel OGK5

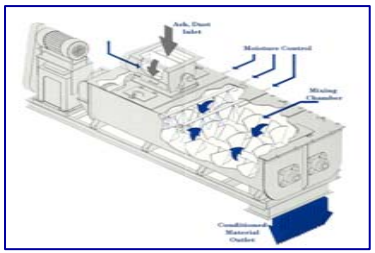
- Investment capacity: 410 MW
- NTP: 3Q 2008
- COD: 3Q 2011
- Investments: ~ 400 mln EUR

Environmentally clean technology

- Signing of Environmental Agreement with Government of Sverdlovsk region
- Date: July, 14 2011
- Investments: ~ 525 mln EUR

Enel expertise and technology in Russia

Construction of dry ash removal system



- Location: Reftinskaya GRES
- NTP: 1Q 2008
- COD: 2Q 2012
- Investments: ~ 250 mln EUR
- Compliance with Enel env. standards
- Possibility to sell ash to construction sector

Reftinskaya power units refurbishment

- Refurbishment of power unit No.5
- NTP: 4Q 2006
- COD: 2Q 2012
- Investments: ~ 100 mln EUR
- Capacity increase: 25 MW
- Follow up refurbishment of other 300 MW units
- Significant increase of availability ratio and plant's efficiency

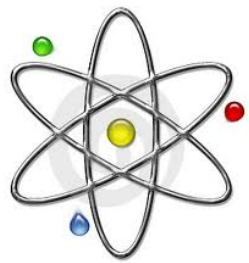
Operation improvements

- Around 50 mln EUR to be invested each year
- Increase of operation life cycle, efficiency and availability

Smart metering technologies

- Cooperation with MRSK Holding and Inter RAO

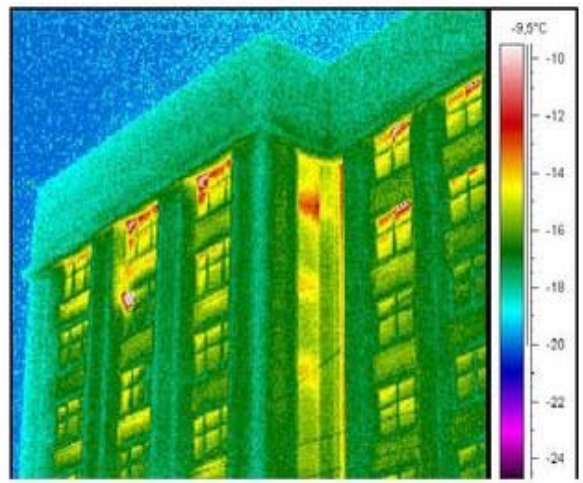
Development of nuclear projects



- Cooperation with ROSATOM and Inter RAO

Historically formed gaps of Russian energy

- Soviet business model
- Cheap energy available
- Low tariffs
- Lack of significant investments
- Cross subsidies in the power sector
- Energy efficiency inaction
- High energy intensity
- Obsolete power infrastructure



“Double gap” in Russia

No significant investments for 20-30 years

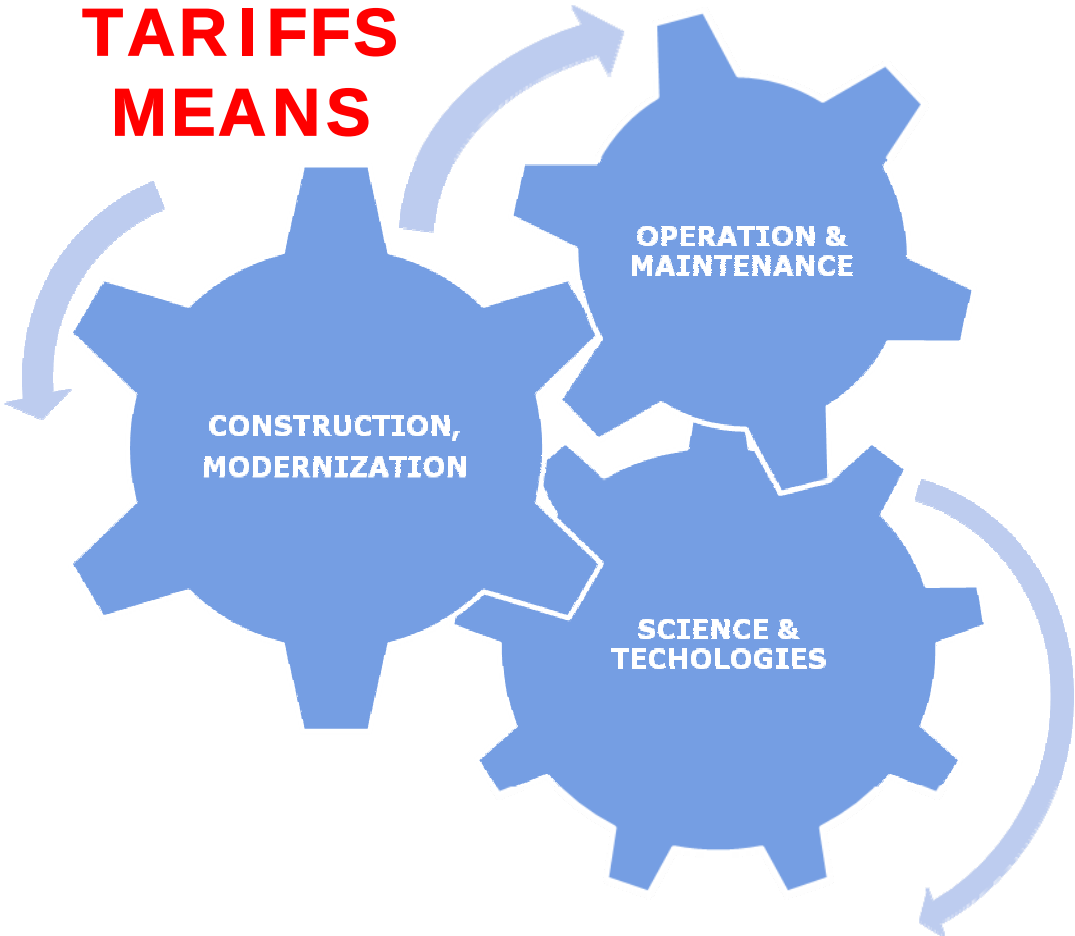
No Modernization without tariffs

No Reforms without investments

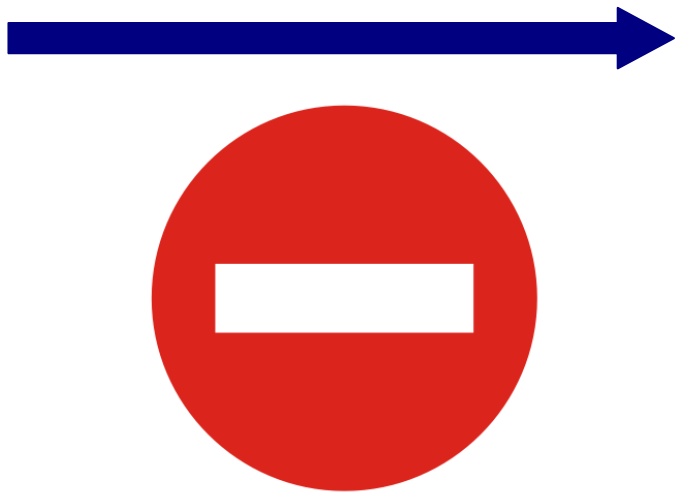
Lower tariffs in the USSR in comparison with OECD countries

Tariff is KEY to future sector development

TARIFFS MEANS

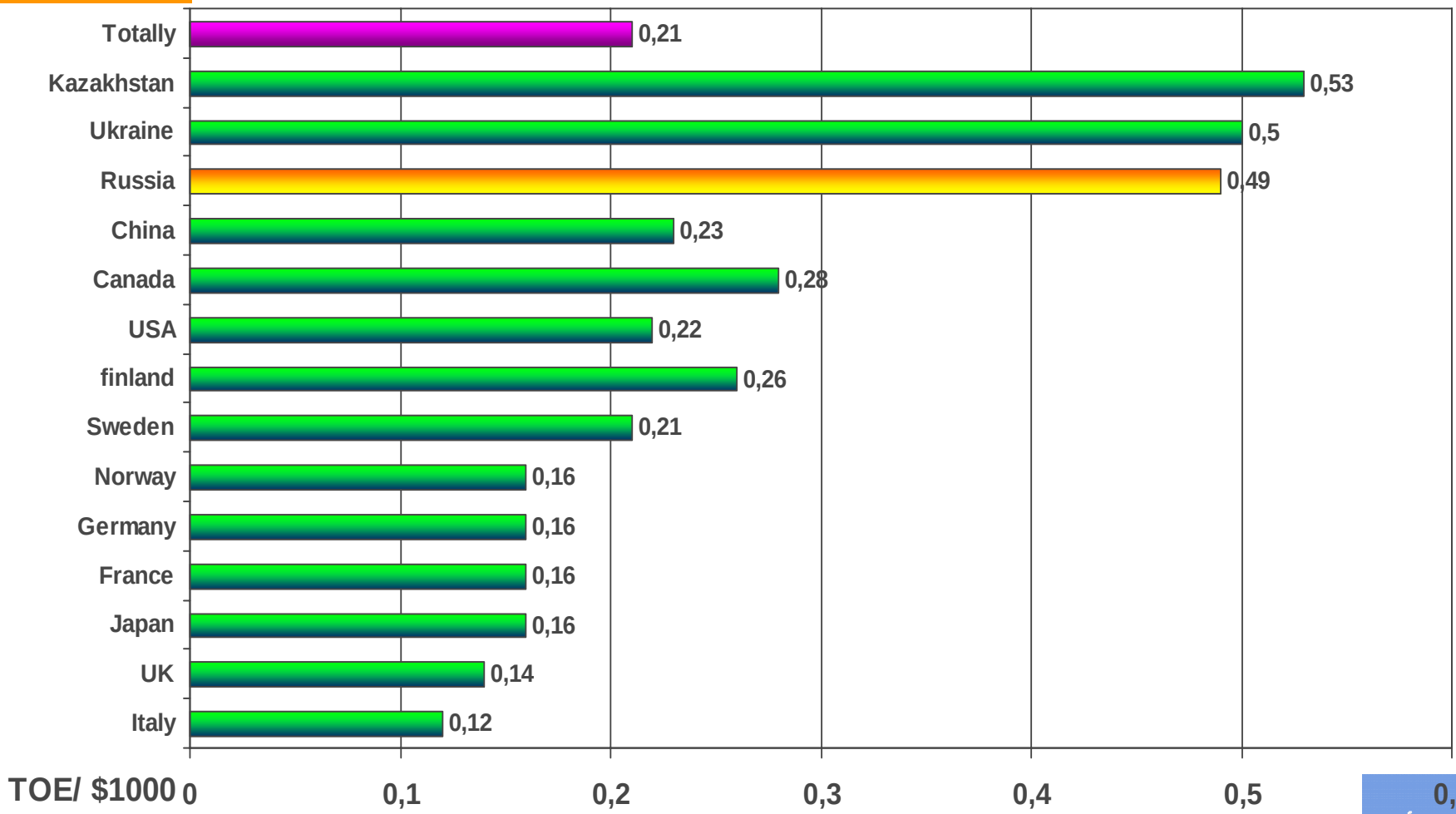


NO TARIFFS - STAGNATION



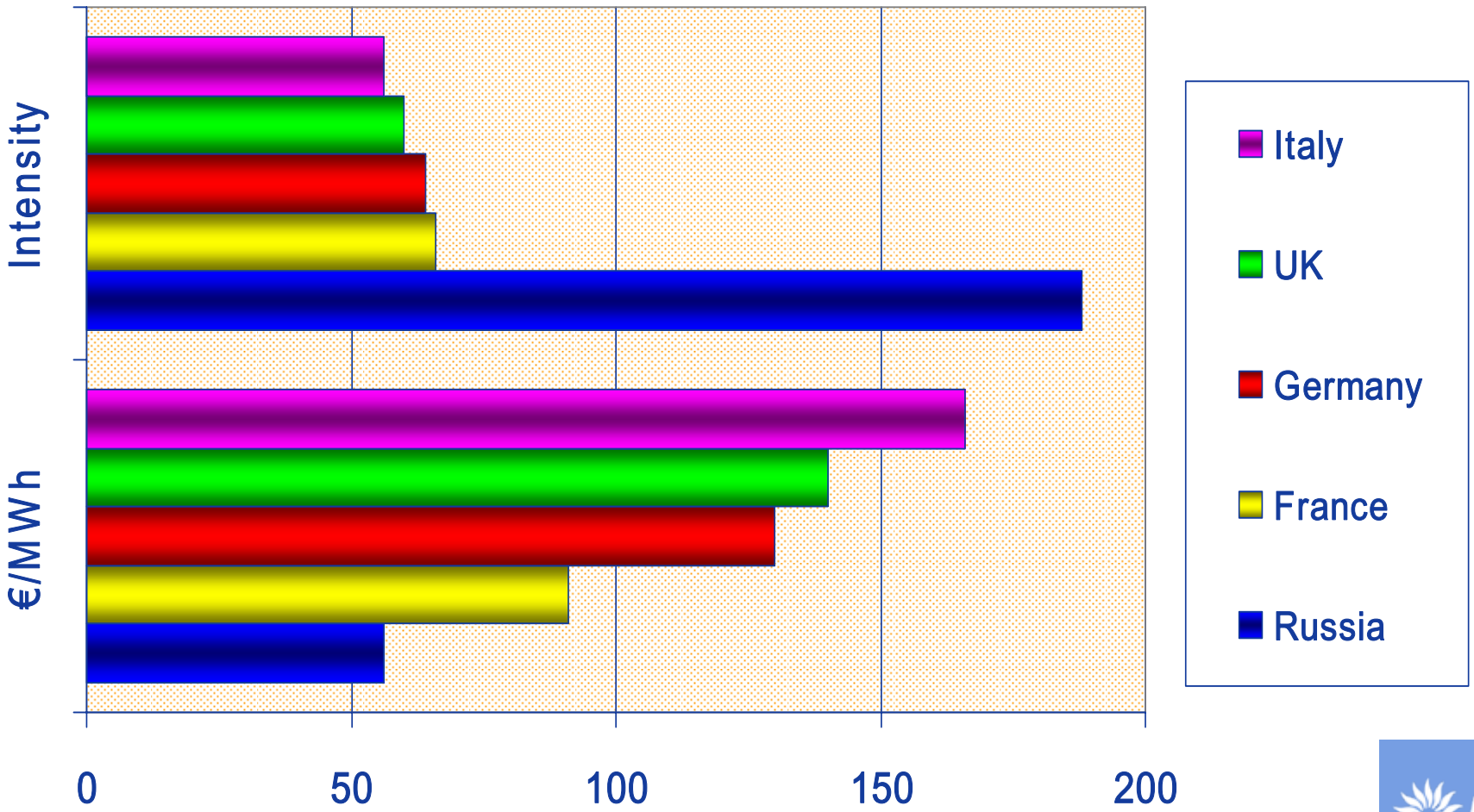
Energy intensity

Energy intensity of Russia 2-3 times more



Source: www.apbe.ru

Tariffs VS intensity



Graphic shows schematic correlation

Tariff is complicated…

- For generators
- For distribution
- For suppliers
- For consumers

FOR EVERYBODY!!!

Think in the future

How to invest in new technologies and modernization with

Low tariffs

Cross subsidization

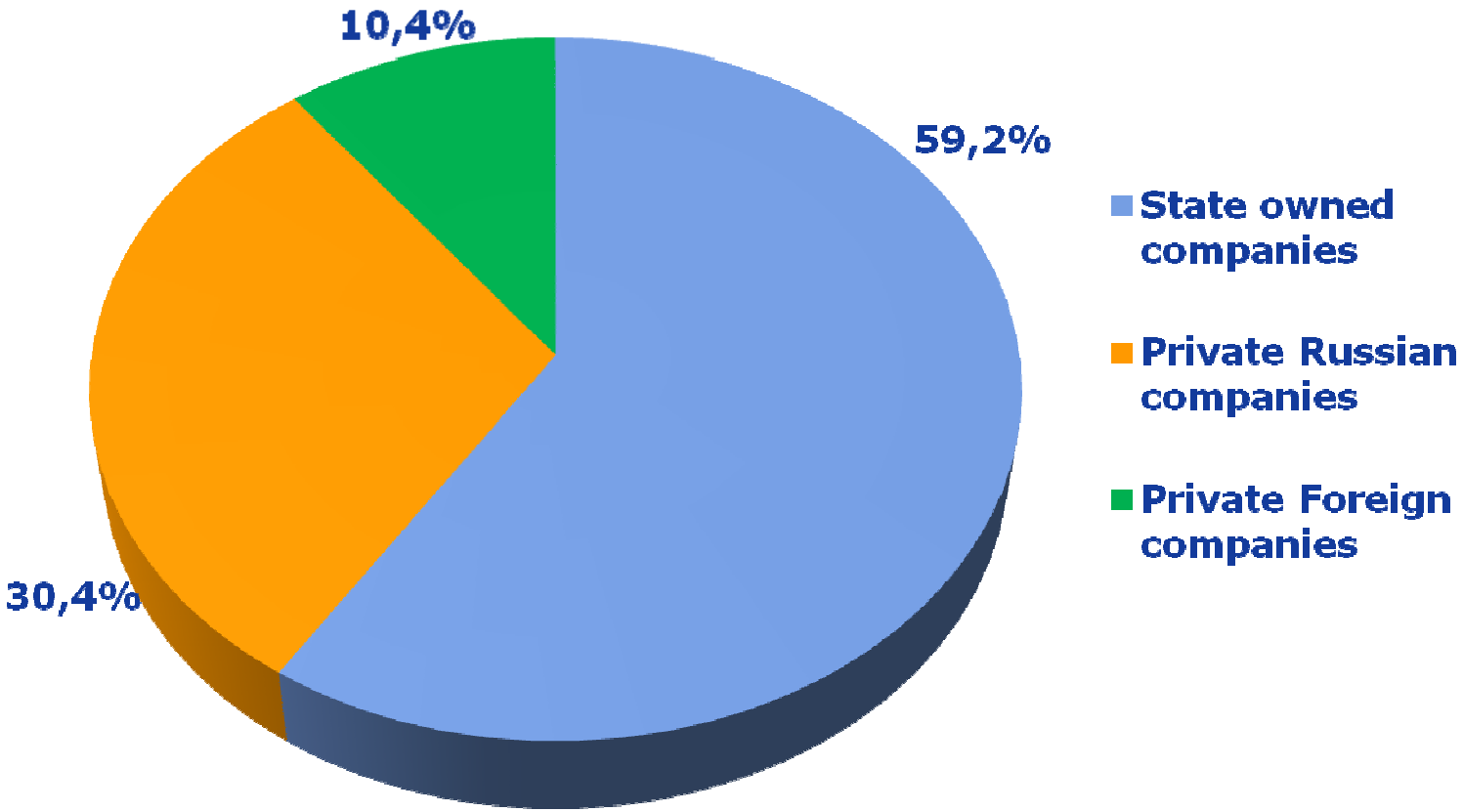
Heat & energy losses

Regulated "free market"

Absence of invest-returning mechanisms

<u>CONSISTENCY ABSENCE</u>!!!

Current structure of power generation in Russia after reformation period 2001-2008



Source: www.apbe.ru

Power sector reform in Russia 2001-2008

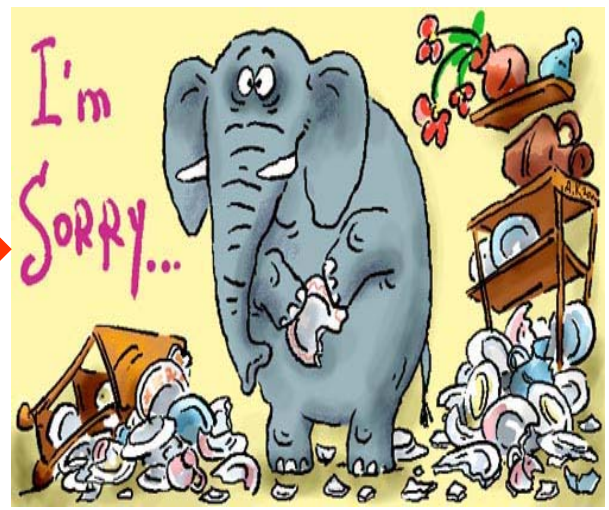
"There is Park Guell in Barcelona. If this designed by Gaudi park had been built by workers from stroybat that would have been… the reform of power sector in Russia…"

One of RAO UES managers at the beginning of the reform

DESIGNED

Park Guell in Spain

IMPLEMENTED



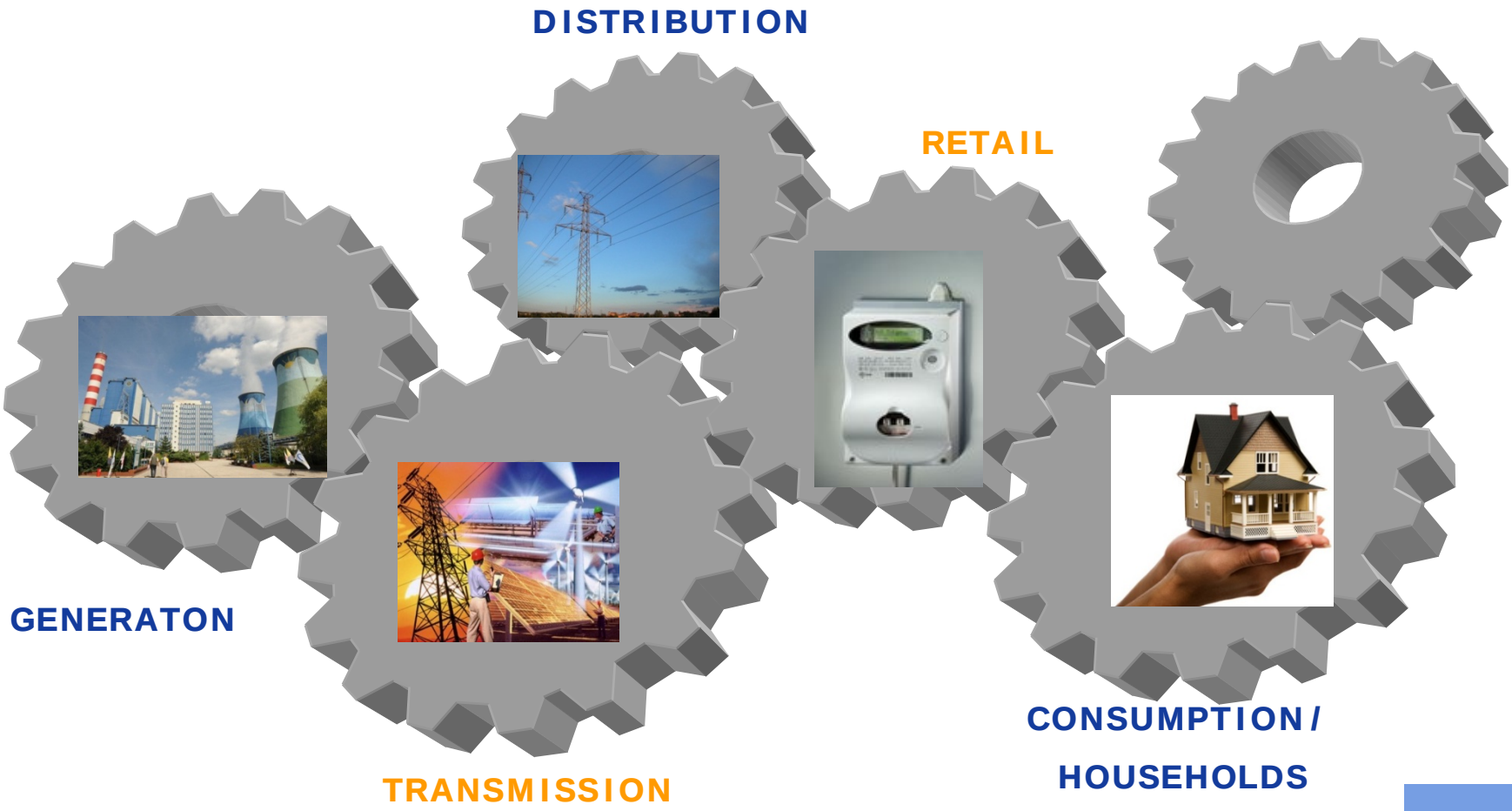
Power sector in Russia: what is next…

Back in the centralization

Situation as is

New wave of reform - “New Chubais” is needed

Integrated approach for the whole power sector



You cannot develop only one item

New metering approaches for Russia

To be efficient you need to meter

Including disconnection

Enel
ENERGY IN TUNE WITH YOU.