



MINISTRY OF  
ECONOMIC AFFAIRS AND  
COMMUNICATIONS

# **The Role of Nuclear Power in the Development of Estonian Energy Sector until 2030**

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**Deputy Secretary General for Energy**



# Storyboard

Statistics from Estonian Energy Market

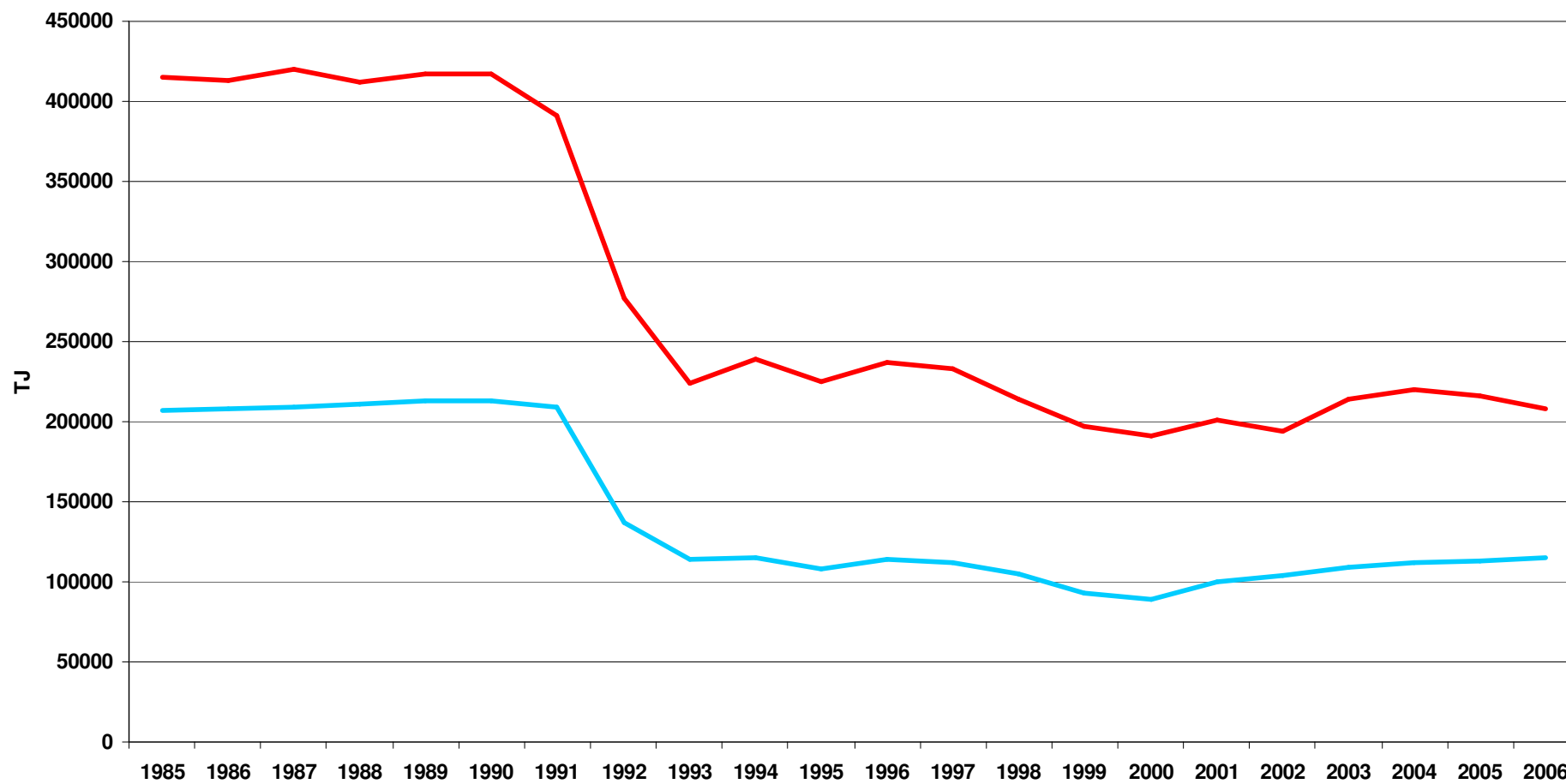
Strategic Goals of Estonian Power Sector

Power Sector Development Strategy

How Nuclear is approached in Estonia

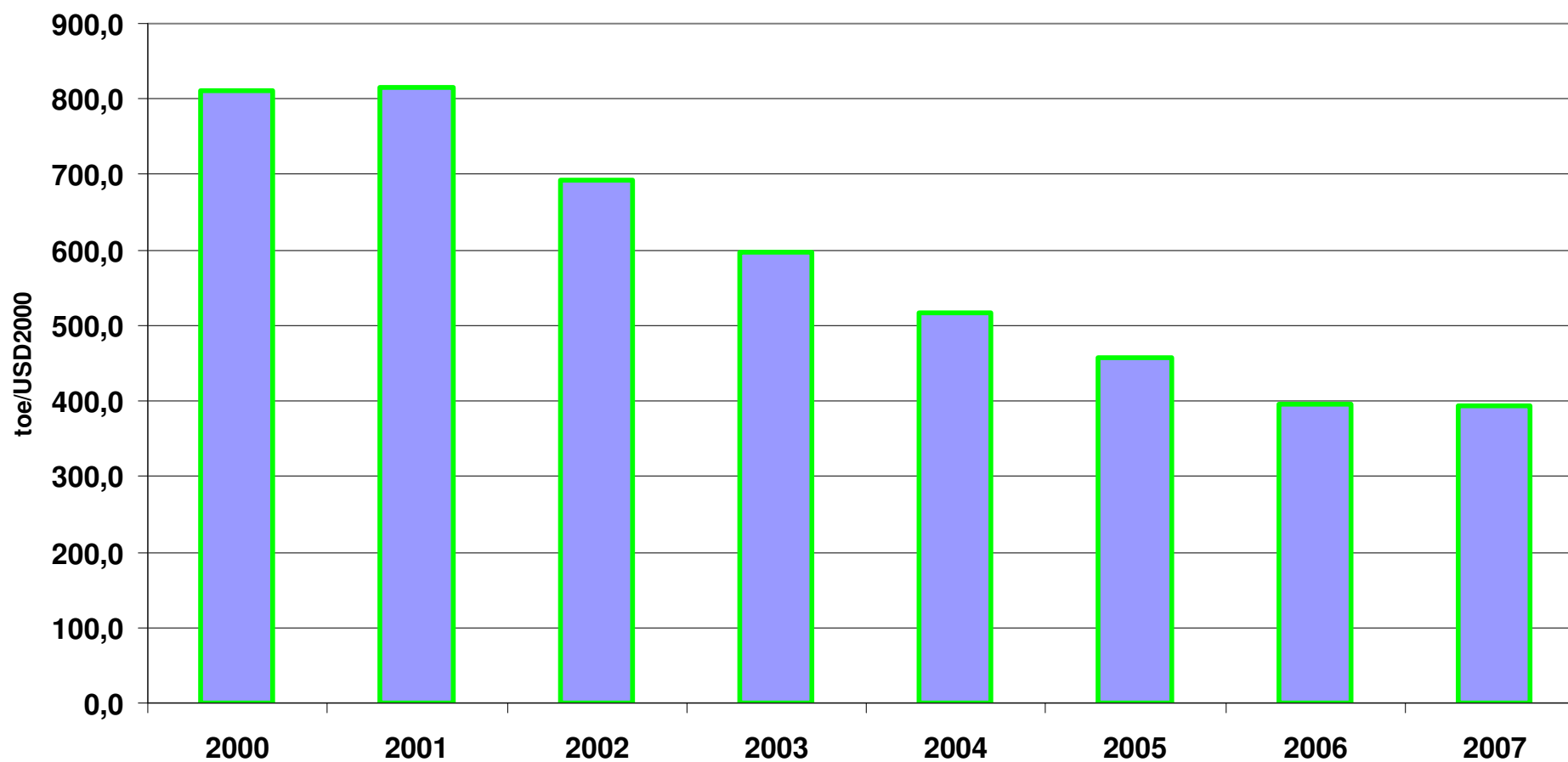


## Primary Energy Consumption and Final Energy Consumption in Estonia



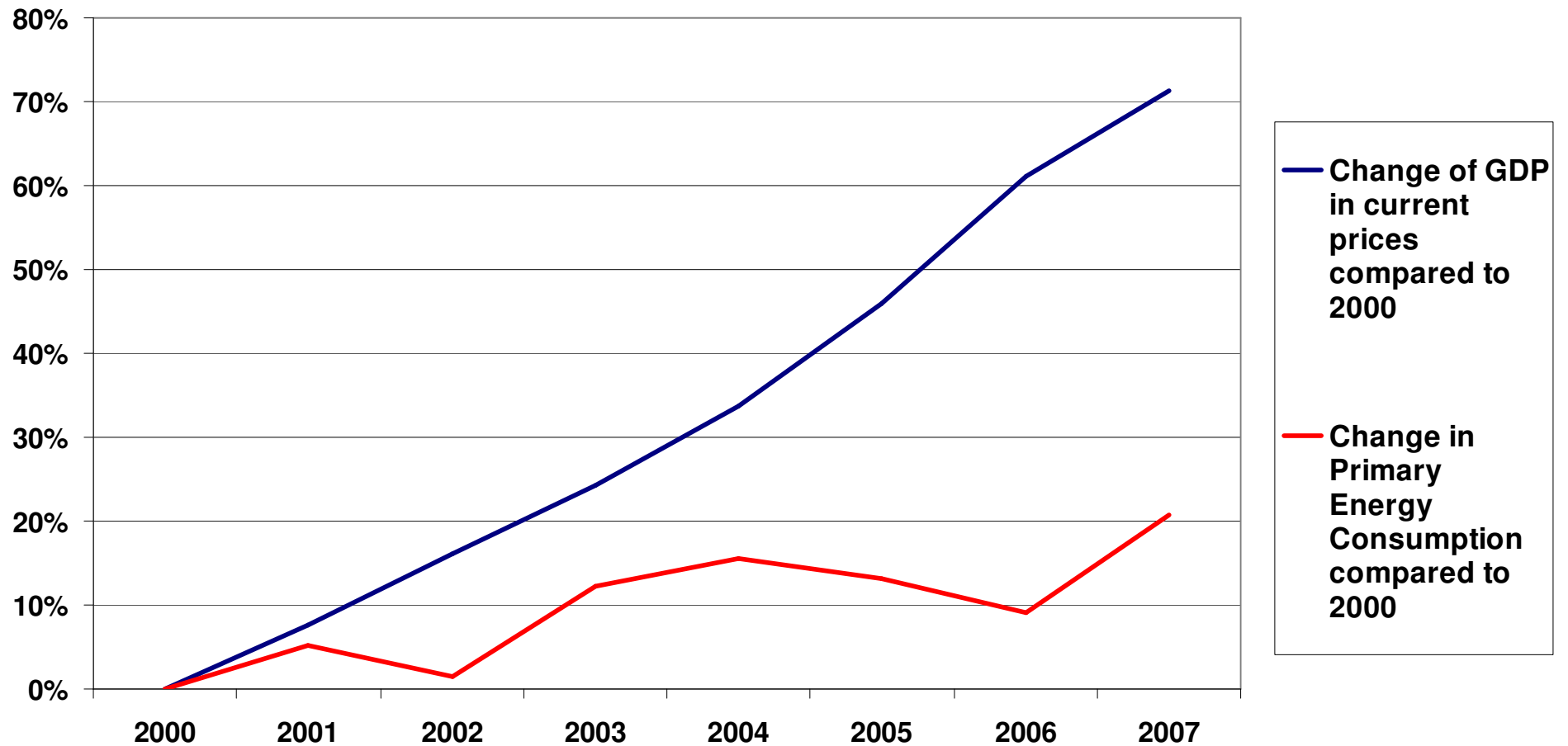


## Energy Intensity (TPES/GDP in USD 2000): trend in Estonia



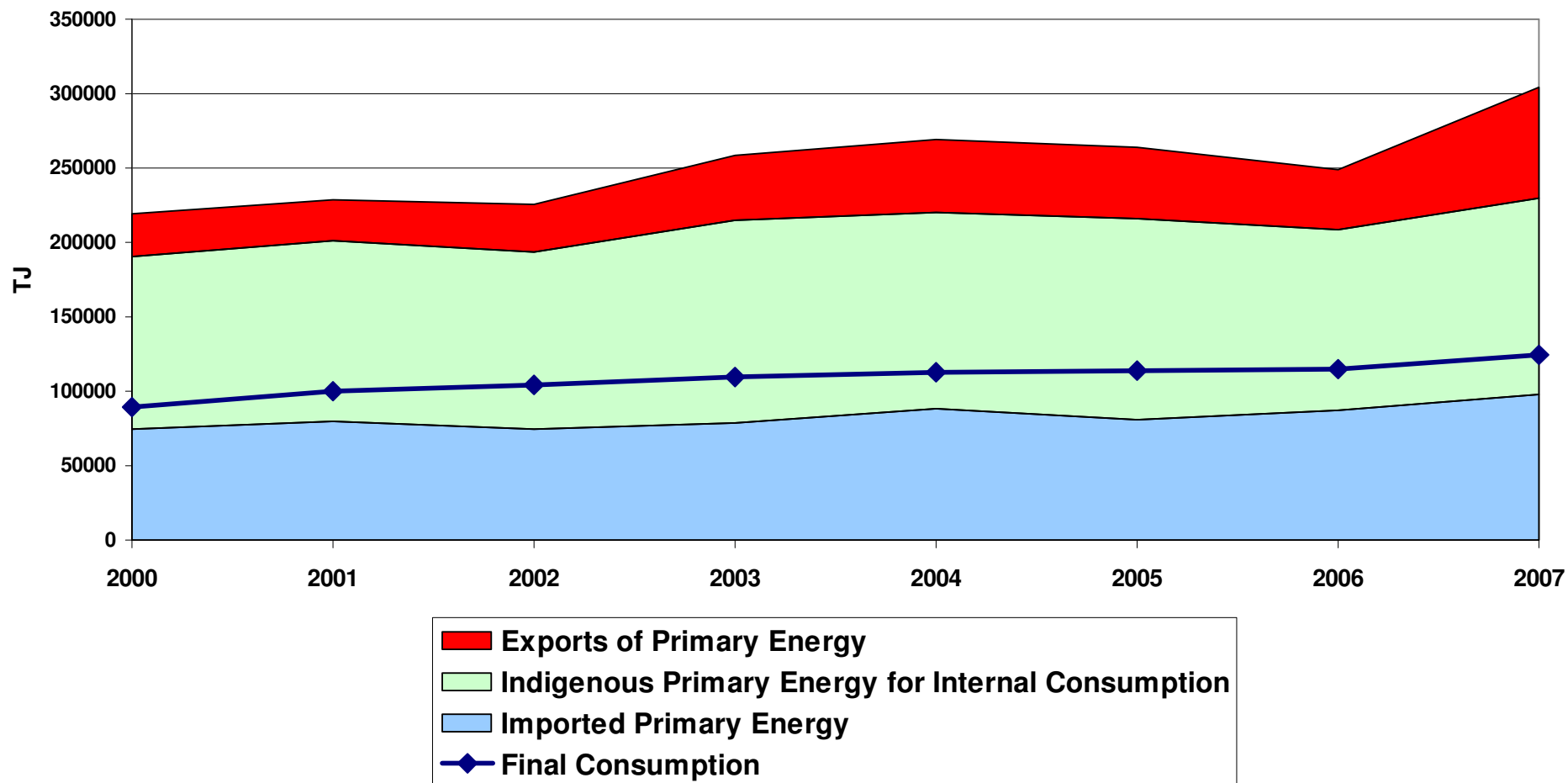


## Trends of GDP and Primary Energy Consumption in Estonia





## Export/Import balance of Estonian Primary Energy Consumption





## Estonian Electricity Market (1)

- ⇒ Around 90% of electricity is produced in Narva Power Plants (ca. 2400 MW) by using domestic oil-shale (economic, social, security of supply aspects).
- ⇒ Strong interconnections with neighbouring states.
- ⇒ 350 MW submarine cable between Estonia and Finland is operational from January 2007.
- ⇒ Need to invest in Narva Power Plants with objective to reduce environmental impact of power production.
- ⇒ Potential threat of unfair competition from Russia.



## Estonian Electricity Market (2)

- ⇒ Small domestic and regional market (Estonian market around 7 TWh, Baltic market 22 TWh).
- ⇒ Limited power market liberalisation (around 12% of the market).  
Next steps will open the power market at least 35% latest by 2009 and to all customers latest by 2013
- ⇒ Impact of closure of Ignalina in 2009, potential lack of power capacity in neighbouring countries in few years.



## **Energy Policy Guidelines for the Power Sector**

Estonia must be able to cover its power needs  
with local capacities

Fair Competition must be ensured in the Power  
Market

Diversity and balance among the energy  
resources must be encouraged



## Why Nuclear Power is Considered?

Changes in CO<sub>2</sub> emissions trading principles  
from 2013

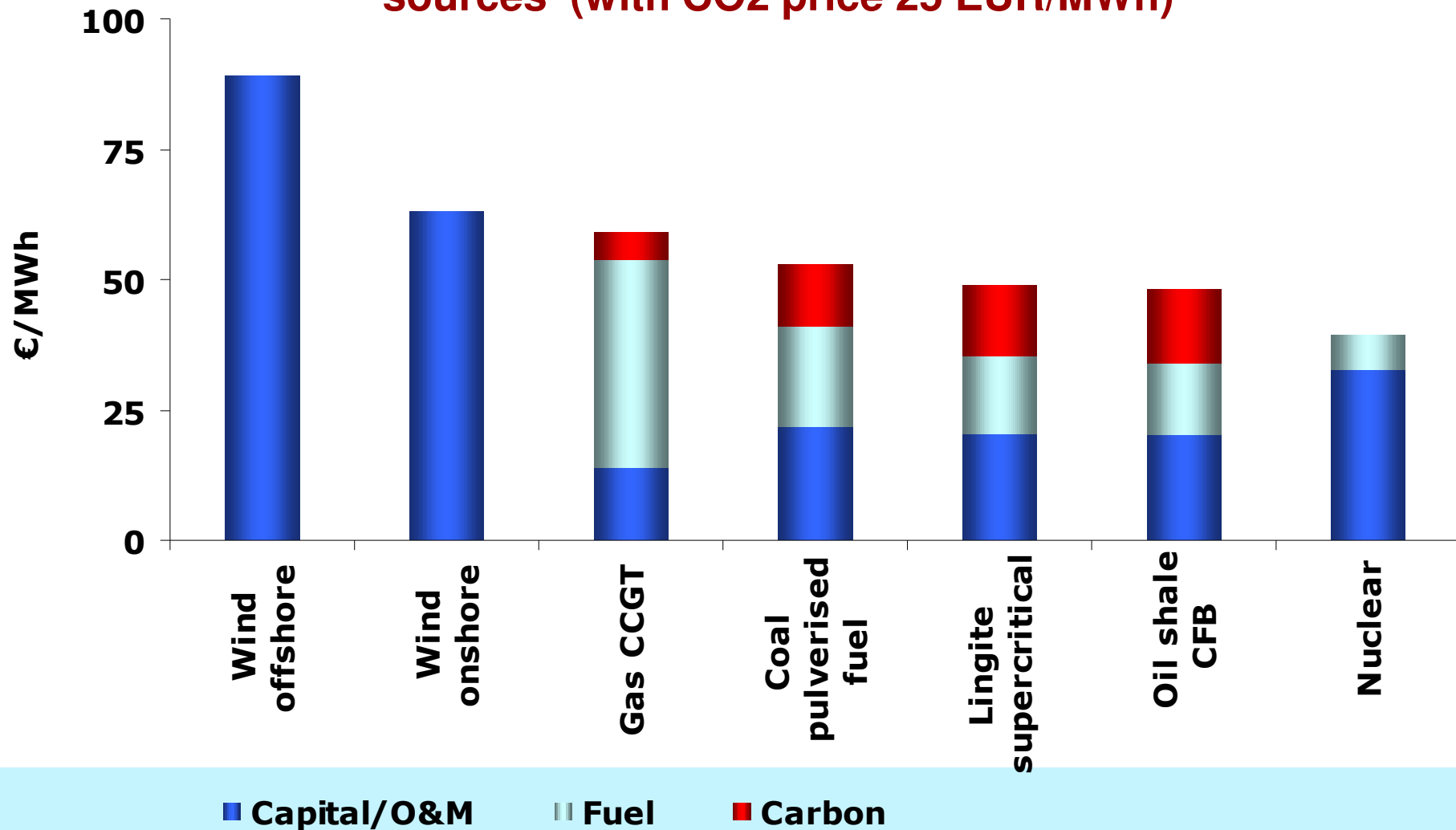
Environmental impact of oil-shale based power  
production

High dependence on Natural Gas is not an option  
for Estonia

Wind Power production fluctuations limit their  
potential

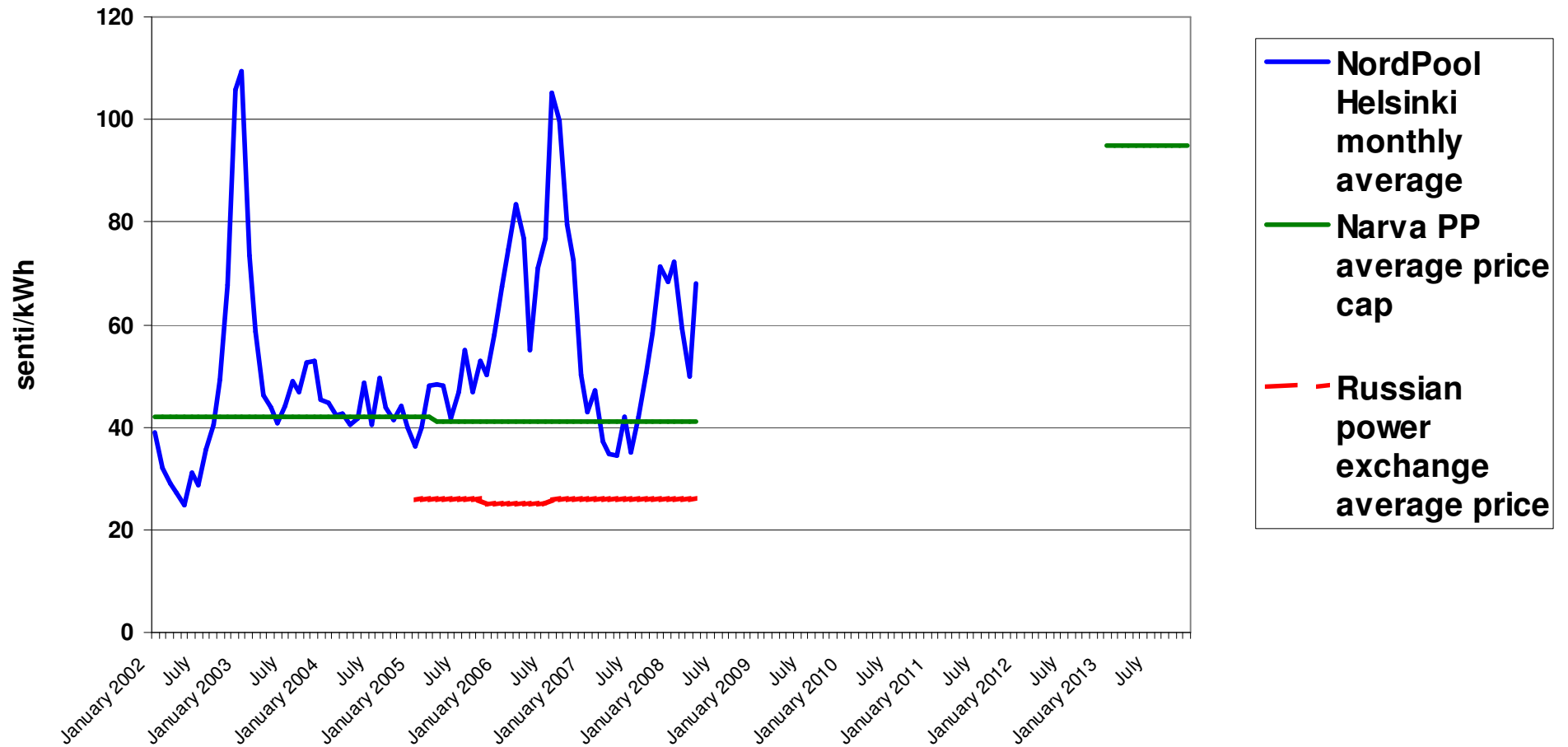


## Potential Price of Power from different energy sources (with CO2 price 25 EUR/MWh)





## Prices in Neighbouring Power Markets





## Developments in Neighbouring States?

### New Nuclear Capacities in Lithuania

- Capacities available? Timetable?

### New Nuclear Capacities in Finland

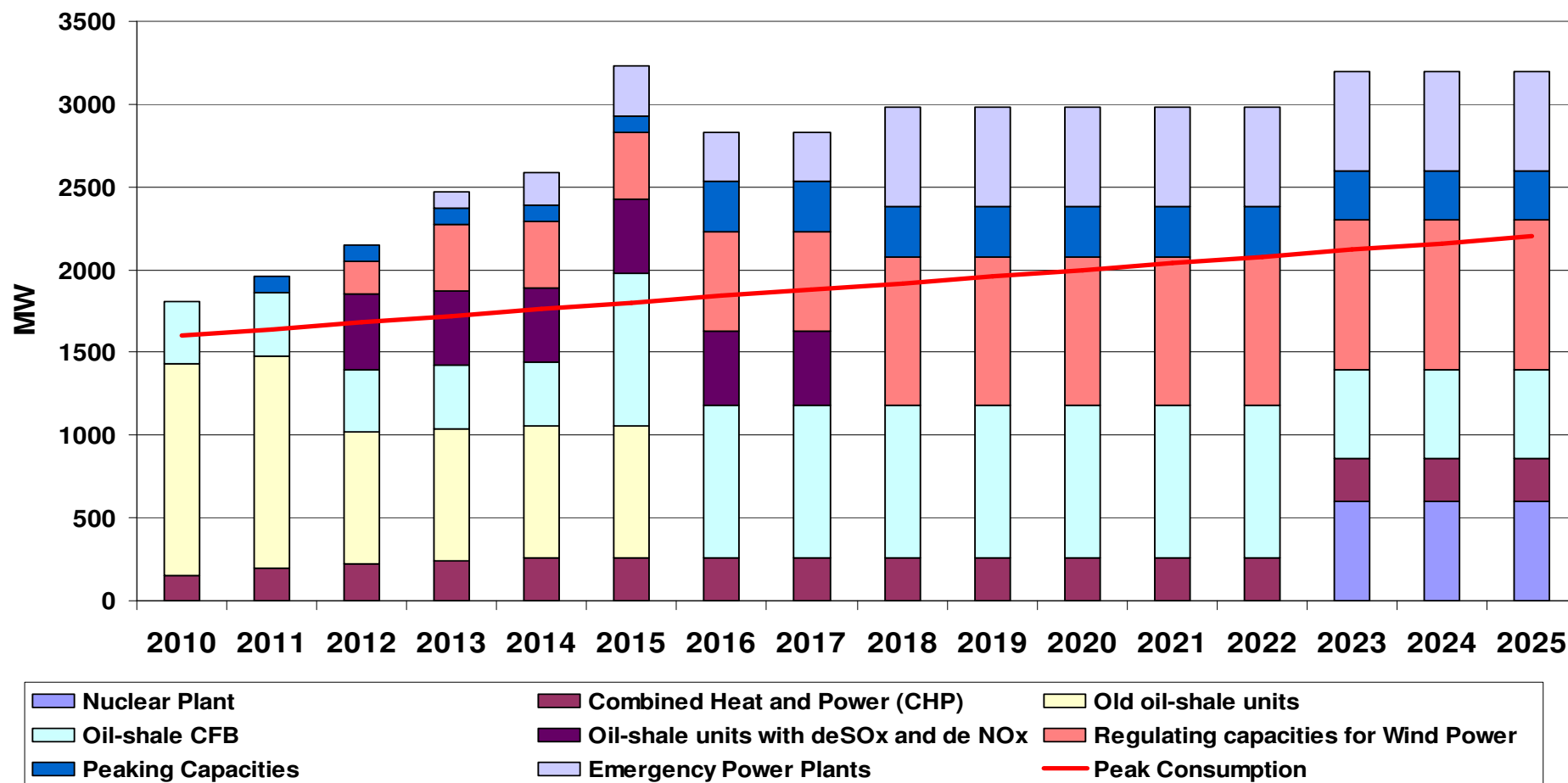
- Capacities available? Timetable?

### New Nuclear Capacities in Russia (Sosnovi Bor, Kaliningrad)

- Capacities available? Timetable?



## Expected development of Estonian power capacities





## **What steps towards Nuclear are needed?**

Nuclear Legislation update by 2012

Political Decision for building by the Parliament

Environmental Impact Assessment

Tender preparations, financing package

Potential building time 2015-2023 earliest



## **Issues to be addressed in case of building nuclear power plant in Estonia**

Location

**Education of people**

Fuel Supply Cycle

Technology

Institutions for Nuclear safety

Building safety

Operational Safety

**Waste management**

**ETC.**



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**Thank You for Attention!**