Workshop
Electricity Generation and Emission Trading in South - Eastern Europe

Emission Trading in Bulgaria

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Energy Institute is an independent private joint-stock company providing solutions in the field of energy, protection of environment and climate change.

For the recent fife years we have developed more than 200 projects in the field of the nuclear and thermal energy, power transmission and distribution, co-generation, district heating and renewable energy.

Energy Institute and climate change:

- Four National Communications on Climate Change,
- The First and Second National Action Plan on Climate Change
- National Greenhouse Gases Inventories and National Inventory Reports for the years 1988– 2005.
- EU ETS National Allocation Plan for the first and second periods
- Demonstrable Progress Report to the UN FCCC
- Initial Report to the UN FCCC
- Advises to the Governmental officials on national policies and measures for reducing GHG emissions

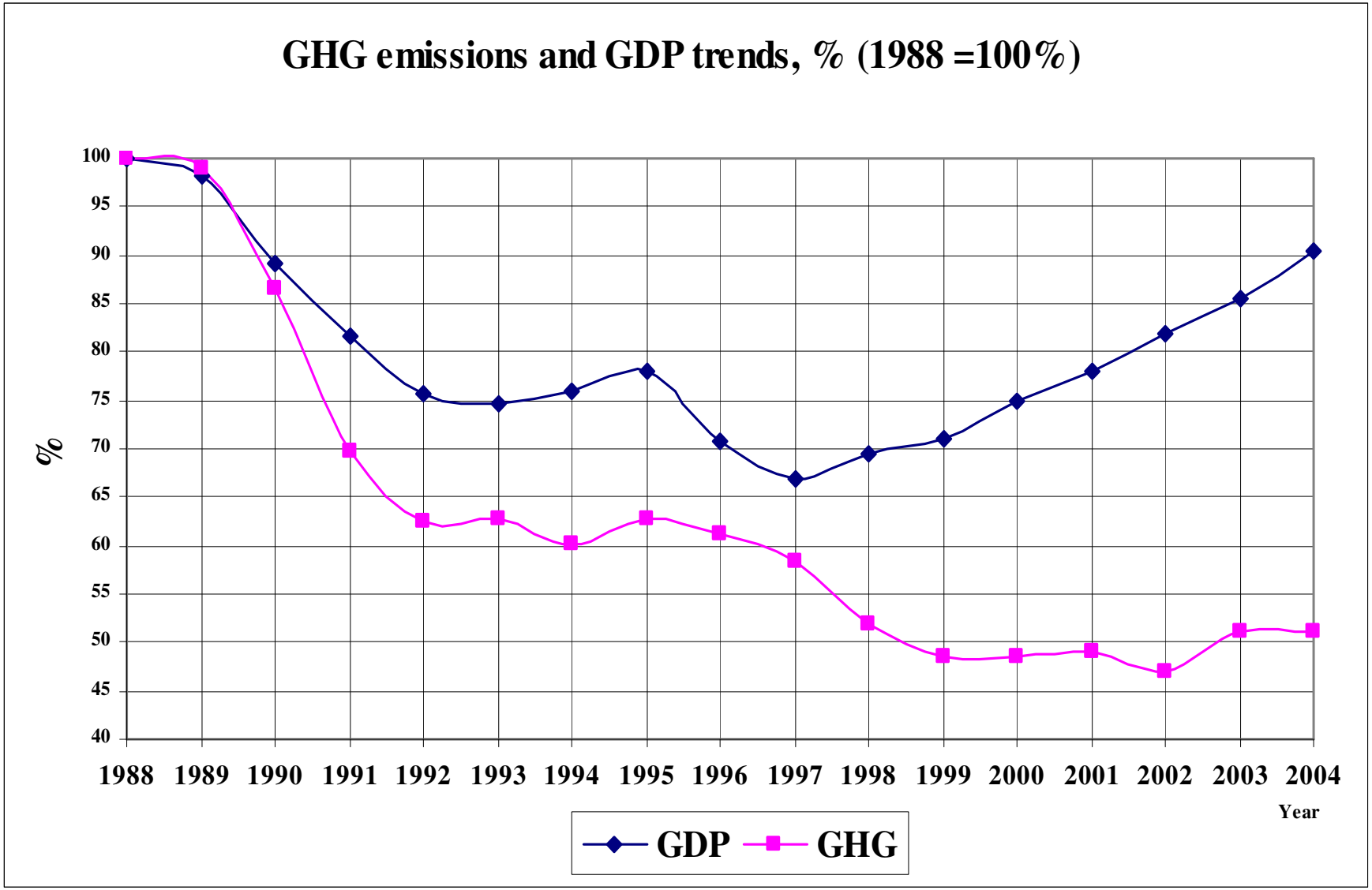
Bulgaria

- The country joint the EU ETS on January, 01, 2007 - simultaneously with entering the EU.
- It become one of the two latest EU member states and participants in the EU ETS, adding there 130 participating installations.

UN FCCC &Kyoto

- Bulgaria ratified the Convention in March 1995,
- Pursuant to article 4 (section 2c and 6) of the UNFCCC, Bulgaria used its right to choose as a base year different from the commonly accepted 1990, i.e. 1988.
- Bulgaria ratified the Kyoto Protocol to the UNFCCC on August 15th, 2002. The target adopted by Bulgaria is an **8% reduction compared to the base year 1988.**

Historic overview of GDP and GHG emissions



Power Sector

In the **base year 1988** Bulgaria Power sector:

- Produced 45.021 TWh , **Imported 4.146 TWh**
- Total in country demand 49.167 TWh

For the first time the 1988 production level was reached **in 2005**:

- Produced 45.249 TWh, **Export 7.581 TWh**
- Total in country demand 36.668 TWh

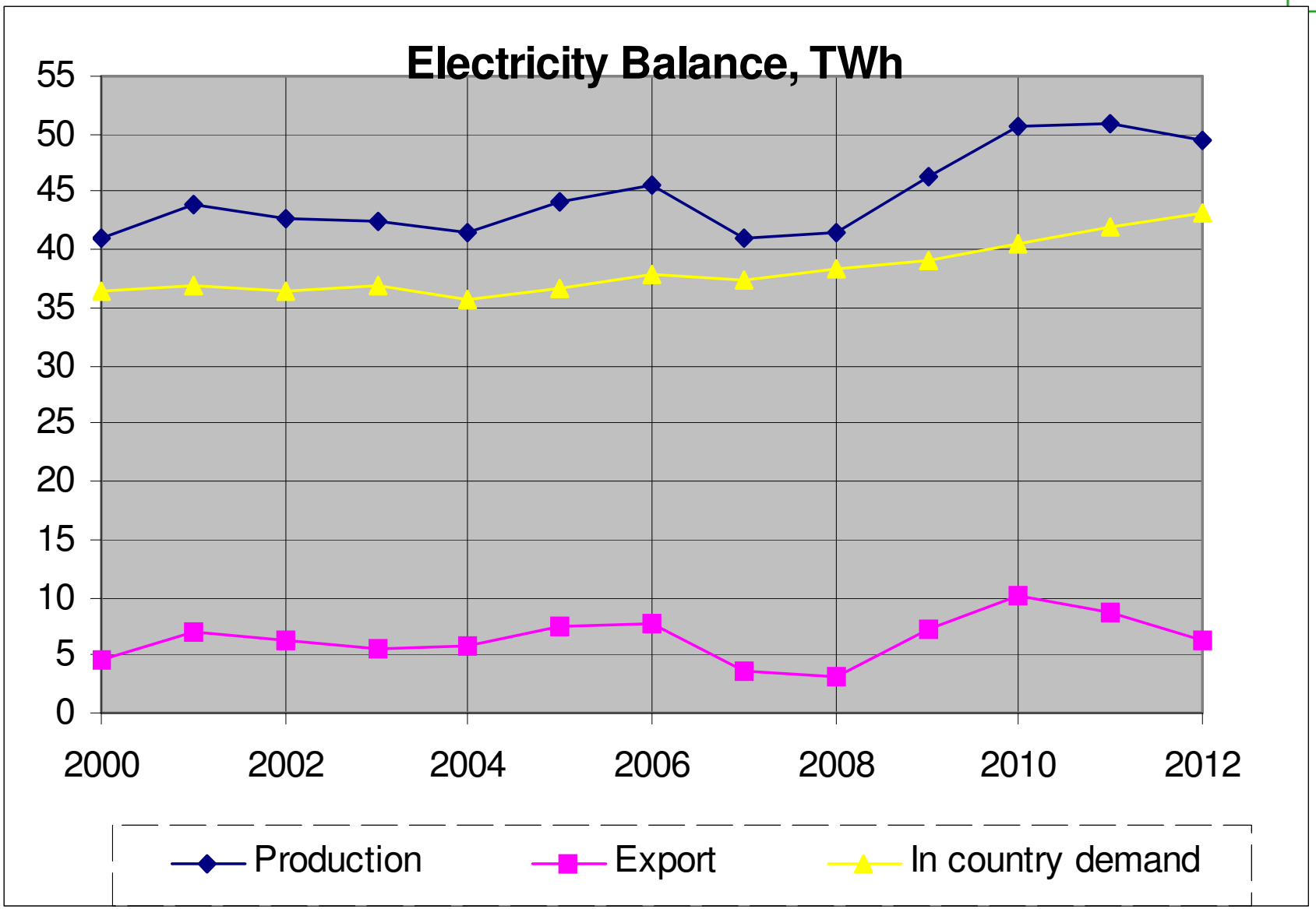
From country importer Bulgaria became country exporter.

Further increase of the export is expected up to 10 TWh in 2010.

Further increase of the demand is expected in the years to come.

Early termination of the operation of four nuclear units of 440 MW was done: in 2002 – 880 MW and in 2006 – 880 MW

Significant increase of the Power sector CO_2 emissions due to the terminated operation of the four nuclear units – 12 Mt, or 12 % of the National totals


Electricity Balance, TWh
55
50
45
40
35
30
25
20
15
10
5
0
2000
2002
2004
2006
2008
2010
2012
Production
Export
In country demand

EU ETS Allocation method for Bulgaria

Common allocation method is used for all sectors

Two GHG emission forecasts are developed:

- **Macroeconomic (top down)**
- **Microeconomic (bottom-up), from participating installations**

Volume to be allocated by sector is derived as compromise between the two projections

Historical information about emissions and production for the period 2002 – 2004 serves as base for allocation between installations:

- Installation base year – average of the two years with highest emissions
- Sector base year – sum of base years of the installations in the sector

Allocation method

For every sector "**sectorial growth rate"** of emissions determined as:

Sectoral emission compromise for every one year of the period 2007 -2012, divided by sectoral base year.

All the installations of a certain sector are allowed to have the same growth of emissions equal to the sectoral growth

Limitations:

- capacity of the installation
- IPCC permit limitation

The excess allowances are reallocated to the other installations in the same sector

Allocation method - no base year installations

No base year installations - installations that were loaded on les than 30% of the rated capacity during the base period

Allocation is based on the business plan for recovery of production process and the average emission factor of the sector.

For the Energy sector emission factor is specified by fuel type – lignite, black coal, gas and liquid fuel.

These new installations that have started operation after 2004 are considered as **no base year modern installations.** They are considered as new entrants

Allocation method – New Entrants

National benchmarking is applied to allocate allowances from the New Entrants Reserve

Allocation is based on the new installation business plan and **the best (lowest) emission factor of the sector** for the period 2002 -2004.

For the Energy sector emission factors are specified by fuel type – lignite, black coal, gas and liquid fuel.

If there is no certain type of production in the sector, the design emission factor of the installation is accepted

Allocation method for Power and Cogeneration Sectors

Two GHG emission forecasts were developed:

- **Macroeconomic (top down), by the System Operator**
- **Microeconomic (bottom-up), by Power plants management**

Volume to be allocated was derived as compromise between the two projections

As far as the sector operation was disturbed by:

- the early termination of operation of the two nuclear units in 2002
- and by the ongoing refurbishment of the power plants,

to part of the power units the rule for no base year installations was applied to ensure normal operation of the power plants

Under administrative pressure some installations received allocation against the rules.

Allocation method for Cogeneration Sectors

New entrants that are natural gas efficient cogeneration plants receive allowances for 0.35 t CO2/MWh generated electricity

In order to use this allocation rule one have to prove that the plant meet the Cogeneration Directive requirements!

The **non efficient cogeneration plants** are allocated following the general rules for the new entrants.

Indirect double accounting

There is reserve of allowances set aside for cancellation to avoid indirect double accounting of emission reductions in case of:

- known Joint Implementation projects,
- new Joint Implementation projects

New projects with indirect double accounting are expected in :

- cogeneration
- renewable electricity
- electricity demand efficiency

Annual issuing of allowances

The plan sets rules for annual issuing of allowances to the accounts of installations,

that allow to reduce the allocated quantity, if prior to the annual issuing of allowances to the installation limitations of the production capacity are introduced due to environmental protection reasons via IPPC permit or other document.

Some other peculiarities were introduced by the Government in order to limit the trading potential and to give the Government right to

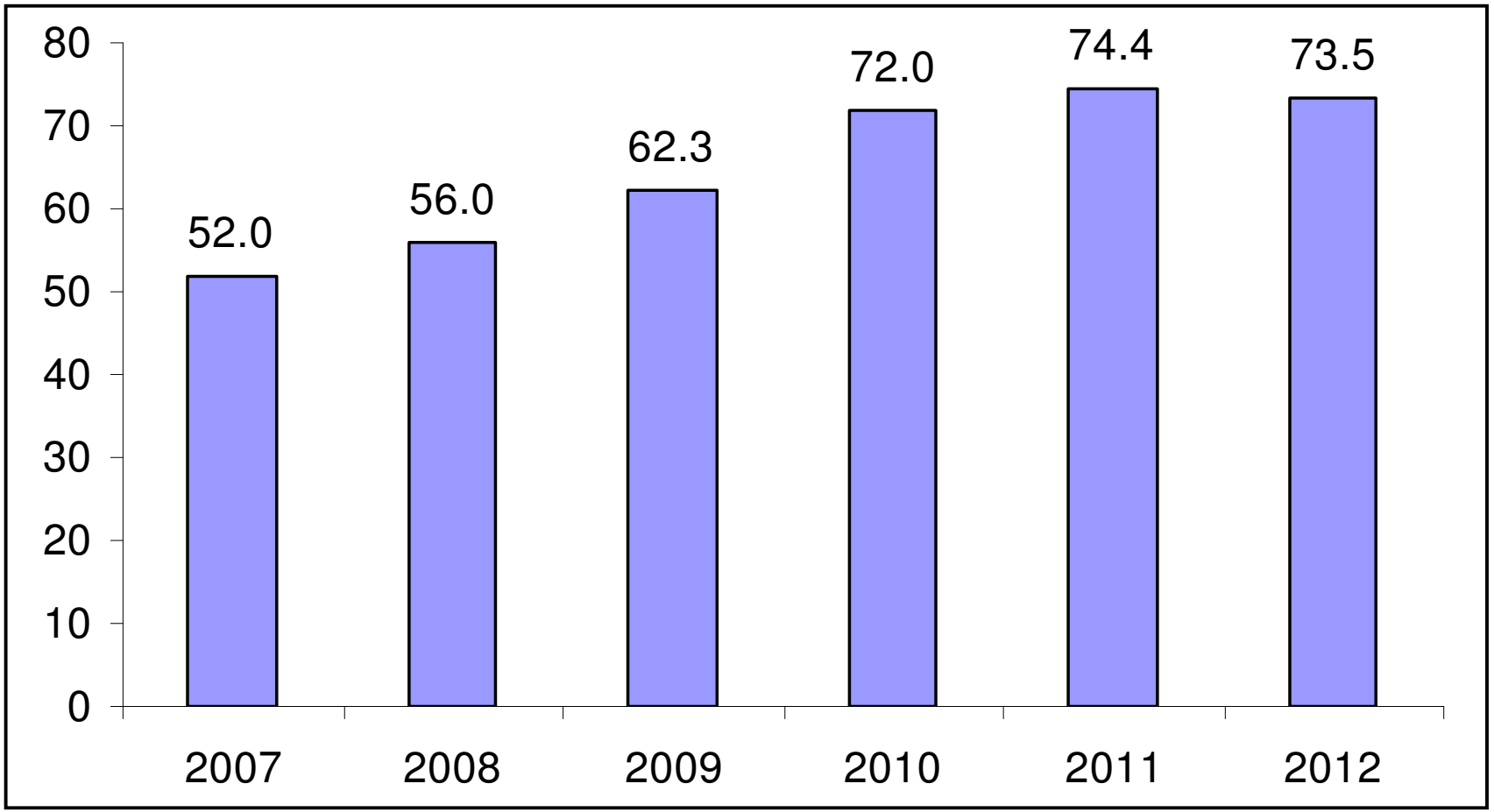
post allocate part of the allowances

- Rule that allows to trade only the excess allowances originating from the introduction of emission reduction measures,

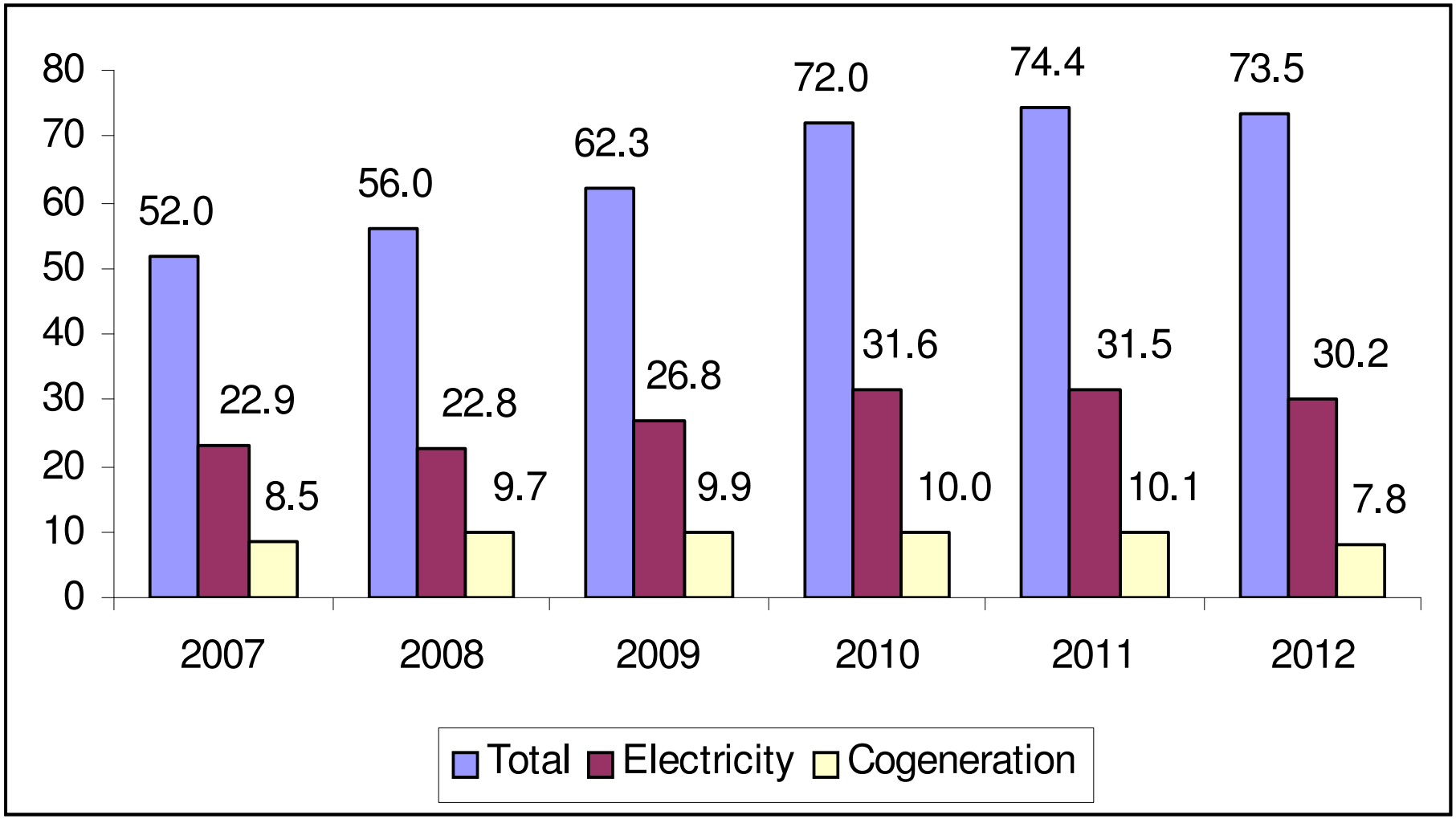
  while the excess allowances that comes from reduction of the production volume should not be traded and should be transferred to the New Entrants Reserve
- Cold reserve “reservoir” of allowances is set to be post allocated to power plants in case of unscheduled lose of generation capacity.
- Rule that allows the operator to keep the allowances for closed installation(s) for four years, if new “replacement” capacity is introduced.

The first two were rejected by the Commission, but the Government insists in them

Allowances allocated in the Bulgaria, millions (annual average 67.6)



Allowances allocated, millions



Status quo

- Emission permits were issued to most of the installations. Those which have not got permits were not stopped and are operating.
- Monitoring plans are enforced at a very few of installations

- The National rules for accreditation of verifiers by the National Accreditation Service are not set yet.
- There is no one legitimated verifier in the country.
- Representatives of foreign companies that are legitimated verifiers in other EU countries are trying to contract local installations as verifiers.
- This is illegal. These companies should meet the local national requirements in the country

Status quo

- Allocation plan for the first period is in the European Commission - not approved up to now
- The registry is not operational yet

  Consequences for an installation:

  The real quantity of allowances not known

  Not able to sell allowances

  Need to open account in another country registry to buy allowances

- The second period Allocation plan is in the European Commission

Consequences for the power sector

On December, 31 2006 next two nuclear units were stopped and TPP are loaded to cover the demand.

Export was almost ceased because of the:

- lack of capacity
- dry hydro conditions

Electricity export prices have increased due to the lack of capacity

The TPP are selling electricity on prices that do not account the carbon cost and for sure some producers will be short of allowances.

It is not clear what will be the volume of allowances set by the Commission

After approval of the plan by the commission (if the allocation is cut) additional part of the TPP could turn out of allowances!

Necessary Regulations and Rules

Distortion of competition:

- Taxes for export from EU out of the EU???
- Taxes for import from out of the EU into the EU???

Regulated part of the market

- Regulated part of the production should be supplied with allowances free of charge
- Payments between producers for activation of cold reserves during unscheduled outages in the regulated part of the market

Deregulated part of the market

- windfall profits
- auctioning of the allowances
- non discriminatory allocation between participants

Thanks for your attention!

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