



Innovations in Tariff (Price) Regulation in Slovakia for 2017-2021

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Important milestones



BY THE YEAR 2001:

- Ministry of Economy
- Ministry of Finance
- Technical regulation
- Price regulation (existence of significant cross-subsidization)



1 AUGUST 2001:

- Date of entry into force of Act No. 276/2001 Coll. on regulation in the network industries
- THE REGULATORY OFFICE FOR NETWORK INDUSTRIES (RONI) ESTABLISHED

By the end of 2002:

- Creation of legal and regulatory framework

From 1 JANUARY 2003:

- complete transition of competencies to RONI – performance of price regulation



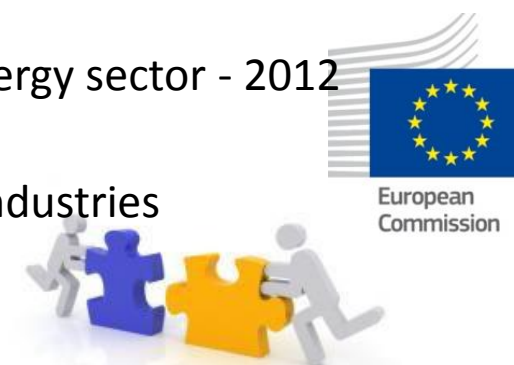
History of regulation (2003-2016)

- elimination of cross-subsidies
- not quite proper privatization during the period of gradual liberalization of the market
- unbundling
- increasing purchase prices of electricity and gas on the international markets
- constant increase in the prices of the electricity and gas until turn of 2006/2007



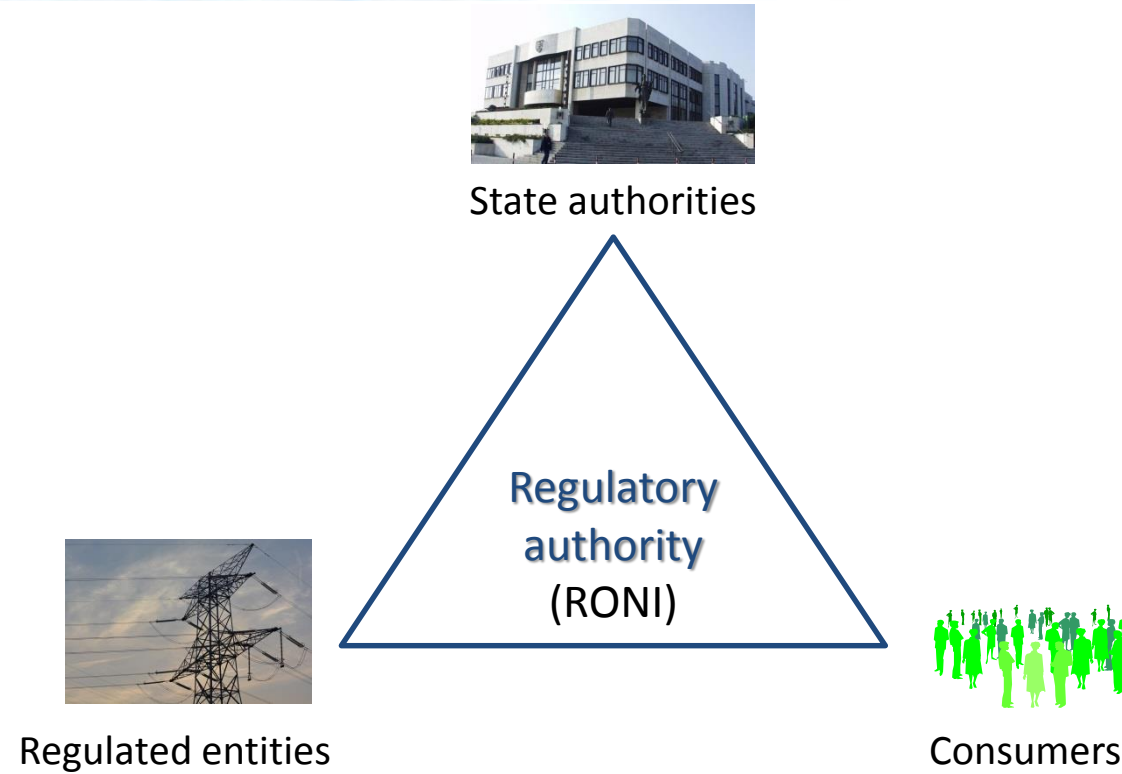
THIRD ENERGY PACKAGE – 2009

- Amendment of the Slovak regulatory legislation in the energy sector - 2012
- *Legal Acts:*
 - Act No. 250/2012 Coll. on regulation in the network industries
 - Act No. 251/2012 Coll. on Energy
- Regulatory policy for the regulatory period 2012 - 2016
- Regulatory policy for the regulatory period 2017 - 2021





Role of the NRA in the energy sector

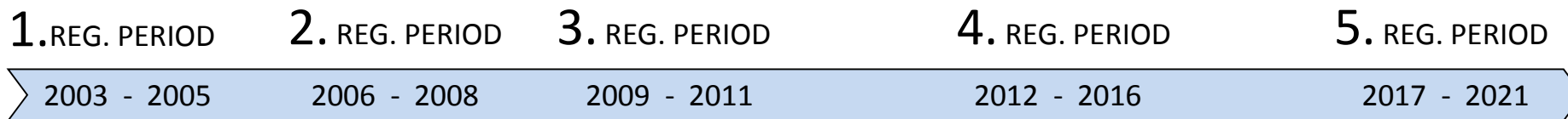


Regulatory authority = institution standing between consumers and energy companies.

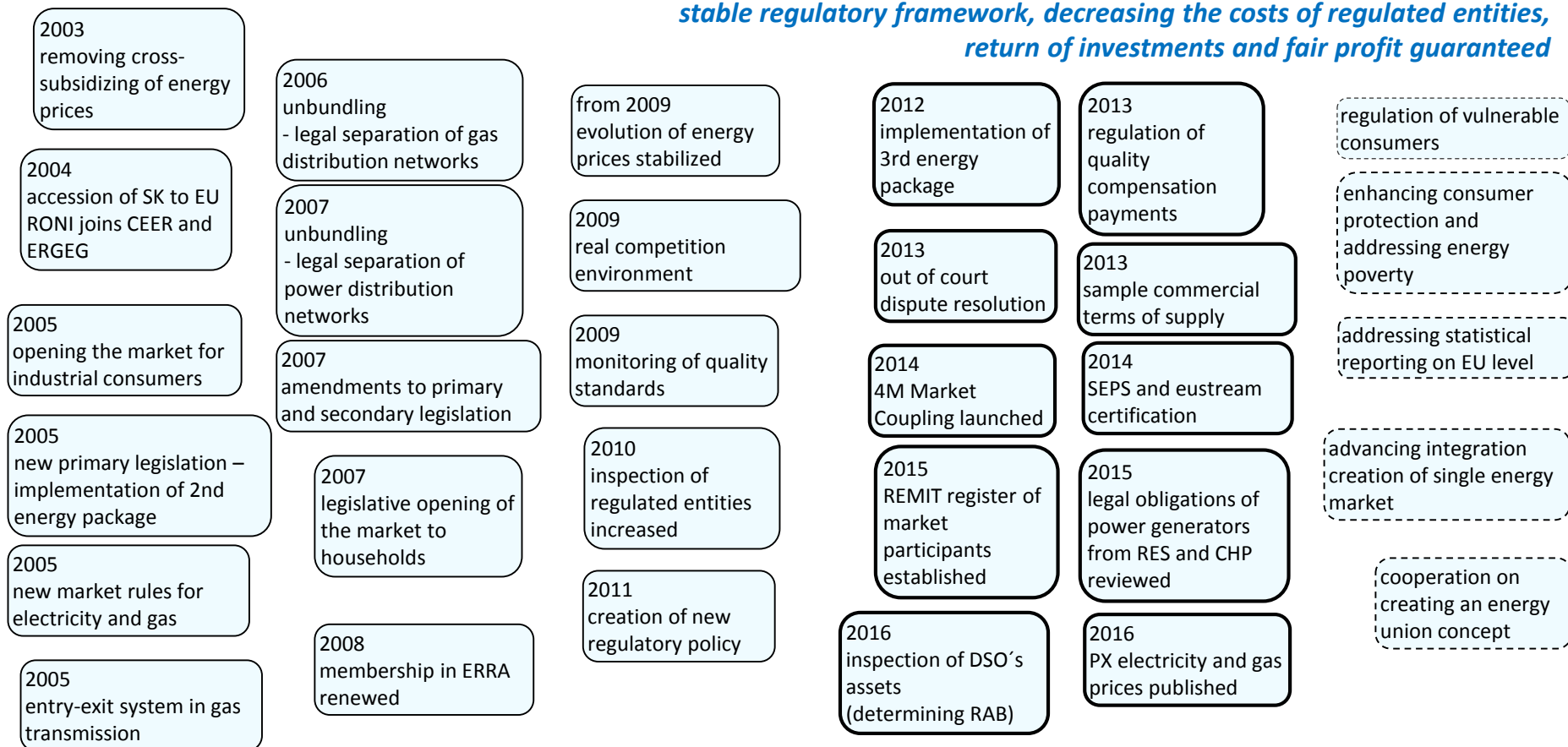




Regulatory periods overview



Price regulation method **Revenue Cap** → **Price Cap** approving maximum prices
stable regulatory framework, decreasing the costs of regulated entities, return of investments and fair profit guaranteed



Regulates implementation of regulation during a given regulatory period – includes:

- Determination of the length of the regulatory period
- The scope and method of the price regulation in the next regulatory period



Objectives of the regulatory policy for the years 2017 to 2021:

- Create conditions for improving the security of supply of electricity and gas
- Balance between the consumers' and investors' interests
- Optimisation of RES generation promotion
- To perceive regulation properly with an emphasis on the fact that regulation is carried out in accordance with EU rules and should always ensure recovery of all costs and reasonable profit
- Ensuring reasonable prices for all consumers with special focus on protection of vulnerable consumers and competitiveness of industrial consumers



Priorities of the new regulatory policy:

- Ensuring return of investments in regulated companies;
- Application of measures focusing on energy efficiency increase;
- Protecting consumers against potential abuse of the supplier's dominant position;
- Cooperation of RONI in addressing the energy poverty issue;
- Promoting the institute of alternative resolution of consumers disputes;
- Fighting against abuse of RES promotion and consequent impacts on energy end user prices.



- Tariff (price) regulation
- Non-tariff regulation
- Extraordinary regulation
- Regulation of quality





Price (tariff) regulation takes into account:

- economically justified costs
- economical effectiveness
- reasonable profit incl. the scope of investments which may be included in the price
- economically justified costs and reasonable profit included in the price which was approved or set by RONI

Price regulation of the goods and services shall apply in the next sectors: Electricity, Gas, Heat Energy and Water Management.

Non-tariff regulation takes into account:

- decision on costs
- the issuing, change and revocation of a license
- consent to the construction of a direct line or a direct gas pipeline
- exemption of a regulated entity from regulation
- reservation of capacity of storage facility and gas accumulation for the network operator
- granting of exemption from the obligation to ensure access of third parties to the network and other exemptions
- adoption of measures to achieve universal service and public service





Extraordinary (emergency) regulation shall be applicable in case:

- an extraordinary situation (emergency) occurs on the market
- the market is endangered due to insufficiently developed competitive environment
- the protection of the consumer requires so



In such cases, the Office may regulate also other activity, goods or price. The Office may also carry out the extraordinary regulation, even if it results from the general economic interest. The Office may carry out the extraordinary regulation only upon prior negotiation with the European Commission

Regulation of quality determines:

- standards of quality
- required level of compliance with standards of quality
- amount of compensation payments
- method of compensation payments calculation
- method and terms of compensation payments



If the regulated entity fails to comply with the standards of quality and such non-compliance has occurred in a manner which can be proven, the regulated entity shall be obliged to reimburse to its consumer a compensatory payment in the amount and form determined by generally binding legal regulation issued by the Office.

The consumer shall not be obliged to demonstrate any non-compliance with the standards of quality. The consumer's claim to indemnity shall not be affected by receiving the compensatory payment.



- Electricity sector
- Gas sector
- Heat Energy sector
- Water management





GAS SECTOR

- Connection to the network
- Access to the transmission/distribution network and transport/distribution of gas
- Providing ancillary services
- Supply of gas to vulnerable consumers (households and small businesses)
- Gas supply by the last resort supplier
- Purchase of gas facilities



ELECTRICITY SECTOR

- Electricity generation from renewable energy sources and from indigenous coal, electricity from high-efficiency combined heat and power generation (general economic interest)
- Connection to the system
- Access to the transmission/distribution system and transmission/ distribution of electricity
- Providing ancillary and system services
- Supply of electricity to vulnerable customers (households and small businesses)
- Electricity supply by supplier of last resort
- Performance of activities of the short-term electricity market operator (OKTE)



HEAT ENERGY SECTOR

- generation, distribution and supply of heat



WATER MANAGEMENT

- production, distribution and supply of drinking water through the public water supply system
- discharge and treatment of waste water through the public sewage system
- treatment of waste water brought into a waste water treatment facility by public sewage
- collection of surface water from water courses
- exploiting the hydro-energy potential of water flows
- collection of energy water from water courses





The various manners of implementing the price regulation can be combined:

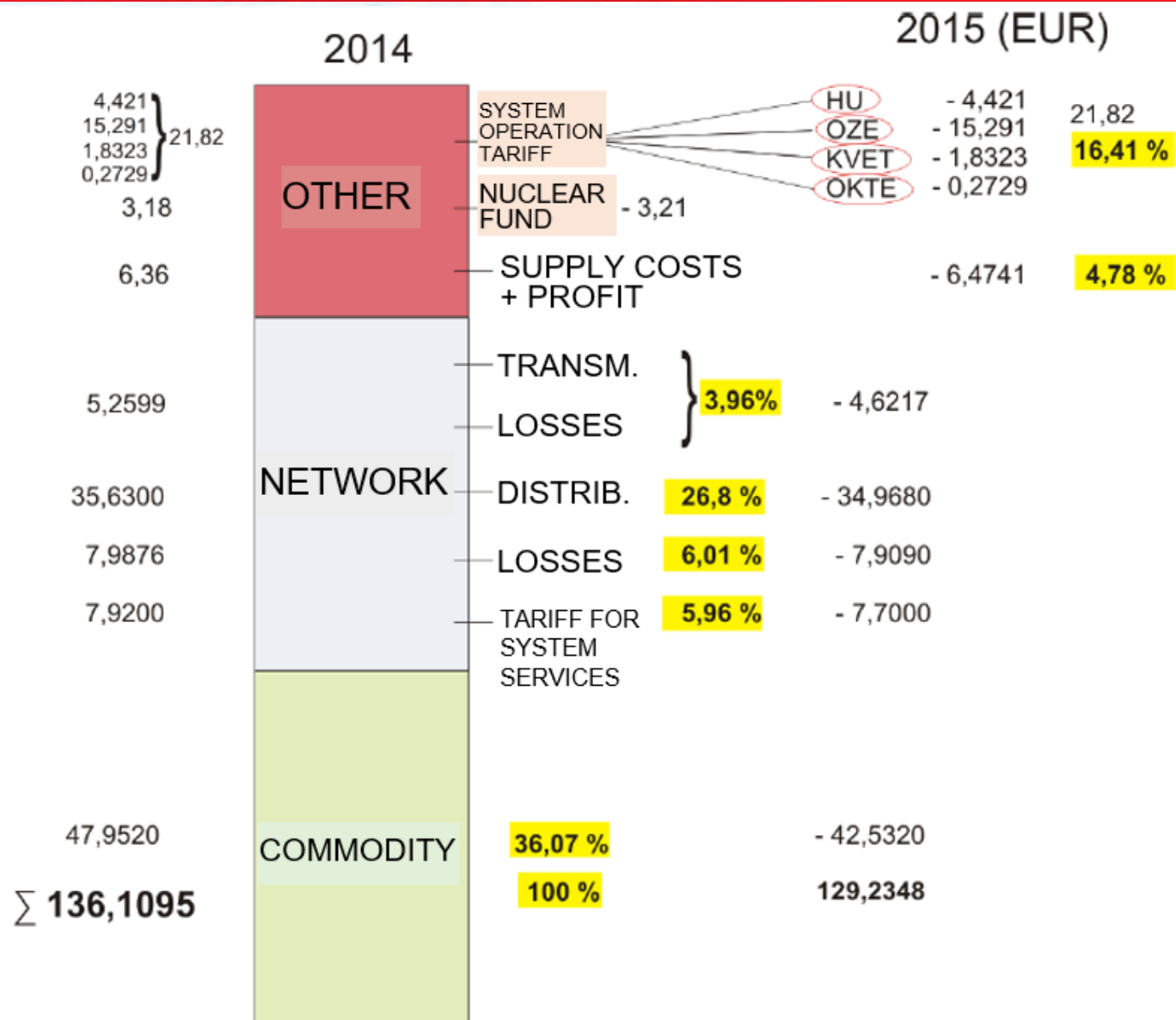
- direct determination of the fixed price [electricity generation from renewable energy sources and the generation of electricity generated by high-efficiency combined heat and power generation]
- direct determination of the maximum price [access to the transmission network, purchase of gas facilities]
- determination of the manner of calculation of the fixed price [electricity generation from indigenous coal, collection of surface waters/ energy water from water flows, use of hydro-energy potential of water flows]
- determination of the manner of calculation of the maximum price [gas distribution, supply of gas / electricity, connection to the distribution system, access to the transmission/distribution system and distribution of electricity, production and distribution of drinking water, generation, distribution and supply of heat]
- determination of the extent of economically justified costs which may be included in the price and the amount of a fair profit
- determination of the price by the application of market measures, such as in particular auctions

The maximum price and the fixed price may be also determined by the comparison of:

- economically justified costs for regulated activities with justified costs for the same regulated activities in the Slovak Republic or member states, or
- individual items forming a structure of the price for regulated activities with items forming a structure of the price of the same regulated activities in the Slovak Republic or member states, or
- prices for regulated activity with the price for the same regulated activity in the Slovak Republic or member states
[gas transmission - benchmarking/entry-exit system]



End price structure





Electricity - supply:

$$CE_t = CE_{PXE,t} \times \left(1 + \frac{k_t}{100}\right) + O_t$$

$$CEDi = KJP_{Di} \times CE_t + PZ_t$$

$$CEVTDi = KVT_{Di} \times CE_t + PZ_t$$

$$CENTDi = KNT_{Di} \times CE_t + PZ_t$$

$$CEPTDi = KPT_{Di} \times CE_t + PZ_t$$

$$CEDTDi = KDT_{Di} \times CE_t + PZ_t$$

$$CETTDi = KTT_{Di} \times CE_t + PZ_t$$

$CE_{PXE,t}$ - average electricity price at the Prague power exchange

k_t - coefficient of diagram balancing

O_t - supplier's imbalance

PZ_t - supplier's reasonable profit

KJP_{Di} , KVT_{Di} , KNT_{Di} , KPT_{Di} , KDT_{Di} , KTT_{Di} - coefficients specifying application of prices in the supplier's business policy



Electricity – distribution:

$$CD_{HN,t} = CDE_{HN,t} + CPE_{HN,t}$$

$CD_{HN,t}$ - maximum price of electricity distribution incl. transmission, $CDE_{HN,t}$ - maximum price of electricity distribution excl. transmission

$CPE_{HN,t}$ - maximum price of electricity transmission

$$CDE_{HN,t} = \frac{VVD_{HN+1,t} + VVD_{HN,t}}{VystE_{HN,t}}$$

$VVD_{HN+1,t}$ - part of costs of distribution from superior voltage level,

$VVD_{HN,t}$ - costs of distribution at the respective voltage level

$VystE_{HN,t}$ - volume of distributed electricity at voltage level

$$\begin{aligned} VVD_{HN,t} = & PN_{HN,2015} \times \prod_{n=2017}^t \left(1 + \frac{JPI_n - X}{100}\right) + O_{HN,2015} + \\ & + RAB_{HN,2015} \times WACC \times K_{DZ} + SO_{HN,t-2} - DV_{HN,t} - 0,5 \times SPE_{HN,t} - 0,5 \times SLA_{HN,t} \\ & - 0,5 \times STS_{HN,t} \end{aligned}$$

$PN_{HN,2015}$ - operating expense excl. depreciation,

JPI_n - average of core inflation,

X - efficiency factor

$O_{HN,2015}$ - baseline depreciation value,

$RAB_{HN,2015}$ - value of regulatory asset base (RAB)

$WACC$ - rate of RAB profitability,

K_{DZ} - rate of available resources utilisation

$SO_{HN,t-2}$ - actual depreciation of assets from RAB,

$DV_{HN,t}$ - additional revenues

$SPE_{HN,t}$ - distributed electricity in cross-border transmission regime

$SLA_{HN,t}$ - revenues from provision of services through SLA agreements

$STS_{HN,t}$ - revenues from provision of services to third parties



Price of gas distribution:

$$PCD_t = O_{2015} + PN \times \left(1 + \frac{JPI_t - X}{100}\right) + PZ \times (1 - IMDS_{t-2}) + \frac{Y_t + SO_{t-2} - VPS_{t-2} - VDMAX_{t-2}}{Q_t}$$

Reasonable profit

$$PZ = \frac{(RAB_{2015} \times WACC)}{Q_{2015}}$$

O₂₀₁₅ is regulatory depreciation based on RAB's re-valuation,

PN is operating expenses, average of 2012-2016,

JPI is the average of the core inflation indicator in Slovakia in %,

PZ is reasonable profit,

IMDS is index of utilisation rate of available resources (from 0 to 1),

Y_t is amount of costs used to cover losses and the company's own consumption,

SO_{t-2} is amount of regulatory depreciation of new assets,

VPS_{t-2} is sum of yearly revenues from connection to distribution network,

VDMAX_{t-2} is sum of yearly revenues for exceeding the distribution capacity,

Q_t is yearly volume of distributed gas,

RAB is regulatory asset base,

WACC is actual rate of RAB profitability (currently 6,47%)



Price of gas supply to vulnerable consumers:

Maximum baseline price of gas supply to vulnerable consumers $CDODP_t$ is calculated as follows:

$$CDODP_t = CKP_t + CPZ_t$$

CKP_t are costs of gas purchasing and are calculated according to this formula:

$$CKP_t = CE_{NCG,t} + kspd$$

$CE_{NCG,t}$ is arithmetical average of daily prices published by EEX (European Energy Exchange), of the product NCG Natural Gas Year futures Cal-t for the period of 12 calendar months preceding the month in which the price proposal is submitted,

$kspd$ is ratio between $CE_{NCG,t}$ price and the diagram of gas supply to vulnerable consumers in the amount of 1,25 €/MWh,

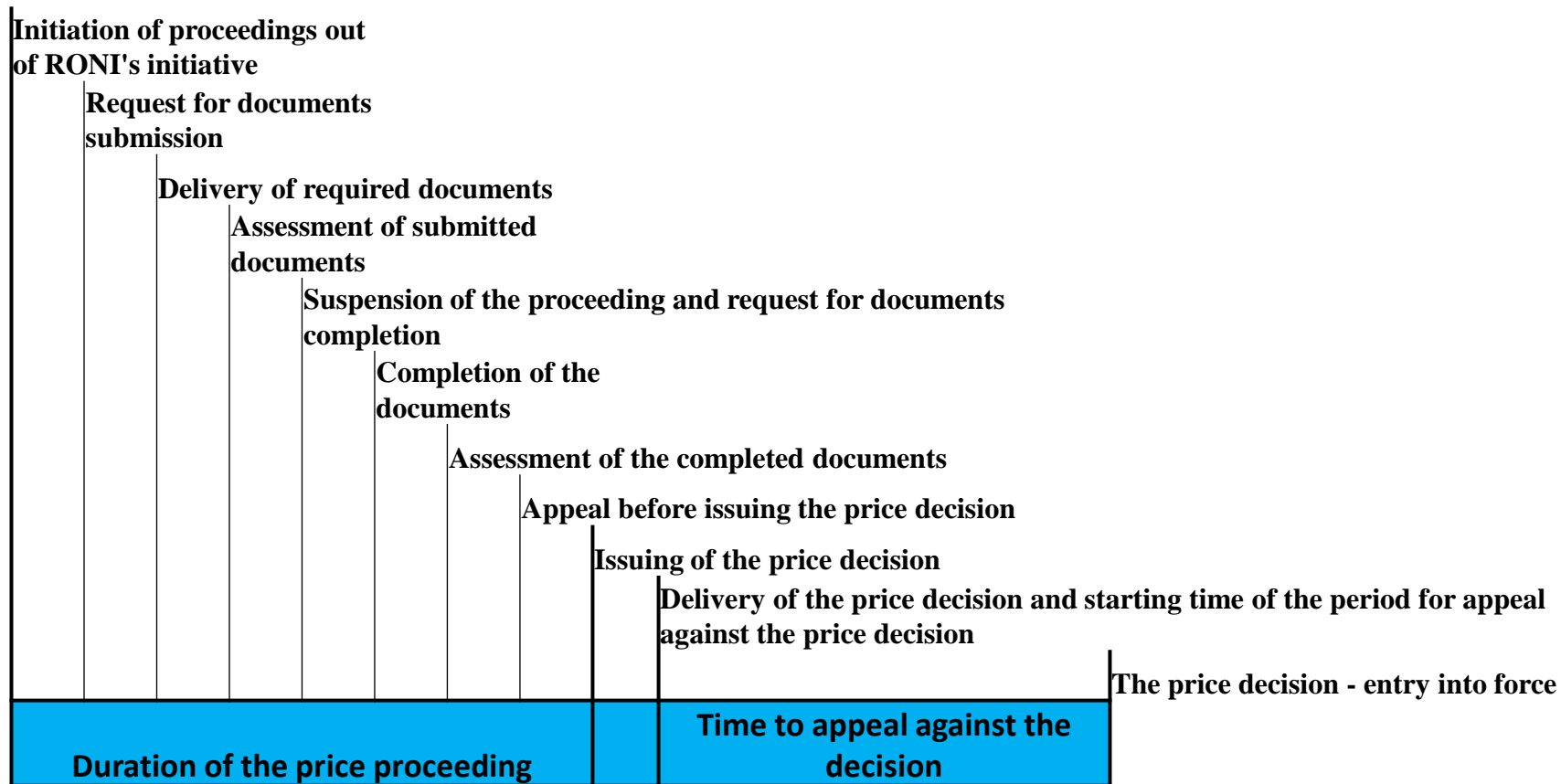
CPZ_t is reasonable profit whose value must not exceed 10 % of CKP_t , however 2 €/MWh at most



- In price proceeding, RONI shall approve or determine the price for the regulated entity by issuing a price decision, which may include conditions for the application of the price
- The price decision for the first year of the regulatory period shall apply to the entire regulatory period, unless RONI approves a change of the price decision
- in the price proceeding, RONI shall decide within 30 days, or within 60 days upon the commencement of the proceeding



Proceeding for price regulation



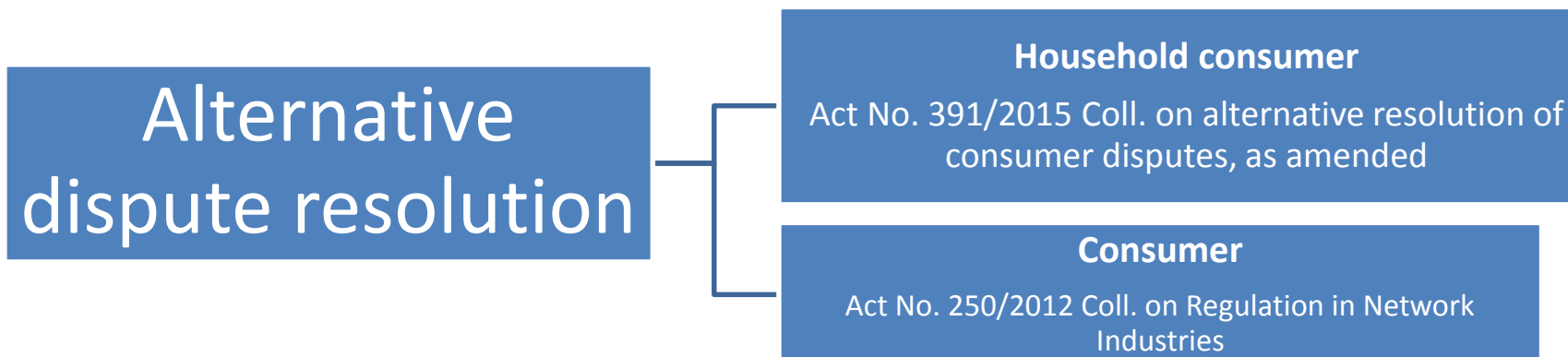
		30/		
1 st		60 th		40 th
day		day	1 st day	day

- The Regulatory Office for Network Industries (RONI) performs *inspection of compliance of regulated companies with the obligations arising from the Regulation Act* and other specific rules
- RONI imposes **measures** to remove and remedy deficiencies discovered during inspection
- in case of breach of obligations, RONI decides on *imposing a sanction* in administrative proceeding
- by means of *handling motions (filings)*, RONI protects legitimate interests of customers and end consumers



The inspection's subject matter is reviewing compliance with:

- Act on Regulation in Network Industries (Regulation Act)
- Energy Act in defined scope
- Act on RES and CHP promotion in defined scope
- generally binding legislation issued to implement the Regulation Act and other specific rules
- RONI's applicable decisions



Under the Regulation Act, if the end consumer is not satisfied with the outcome of the claim or the way of handling it, he/she can file a **proposal to the Office on alternative dispute resolution** with the regulated entity (such as an electricity, gas, heat or water supplier).

For household consumers, special treatment of alternative dispute resolution applies. On 1 February 2016, RONI became also the authority of consumer alternative dispute resolution in the energy and resolves disputes arising from issues in contracts on connection to the distribution system, contracts on integrated electricity/gas supply, contracts on heat supply and consumption, contracts on the supply of drinking water and contracts on wastewater systems.

In both of the above cases, RONI settles the dispute impartially in order to resolve it, and acts as a mediator to settle the dispute and reach an agreement. A successful solution of the dispute is the conclusion of a written agreement, which is binding on both parties.



1. hydro power
2. solar energy
3. wind power
4. geothermal energy
5. biomass incl. all products from its processing
6. biogas, landfill gas, sewage treatment plan gas
7. biomethane
8. aerothermal energy
9. hydrothermal energy





a) Preferential

1. connection of the facility/equipment to regional distribution system
2. access to grid
3. power transmission, power distribution and power supply

b) electricity off-take by regional distribution system operator at the price of electricity for losses

c) top-up payment

d) assuming responsibility for imbalance by regional distribution system operator

Electricity generation promotion is paid via *system operation tariff*.



Support for equipment/facilities of power generators



- Period of top-up payment - 15 years since the power generator's facility/equipment commissioning date
- Electricity off-take for losses – until 31 December in the 15th year of receiving the support – if the installed capacity is up to 500kW/30 kW PV - applies during the facility/equipment's whole lifecycle
- Assuming responsibility for imbalance up to 500kW/30 kW PV-applies during the facility/equipment's whole lifecycle
- Law-given guarantee of maintaining the terms and conditions of support based on commissioning date



The basis for the calculation of the amount of interests - the average annual value of the investment, the interest rate of 6%, with the installment of 10 years

Operating expenses - the cost of fuel and transport costs

Overhead costs - all other costs (repair costs, recalculated costs of one year of general equipment repairs, insurance, administrative costs, rent, travel costs)

Calculated profit - from a total cost of 6%

The price of electricity will be determined for 15 years by the type of technology RES

- the average installed power of the technologies of electricity generation by type of installation of electricity producer
- the amount of produced electricity resulting from the average installed power according to the installation of producer
- investment costs taking into account their own and foreign capital
- supposed interest on the credit amounting to 50% value of the investments with a maturity of the loan for 10 years
- straight line depreciation according to asset's technical life cycle for determination of depreciation
- operating costs including overhead costs and personnel costs within a reasonable amount
- reasonable profit



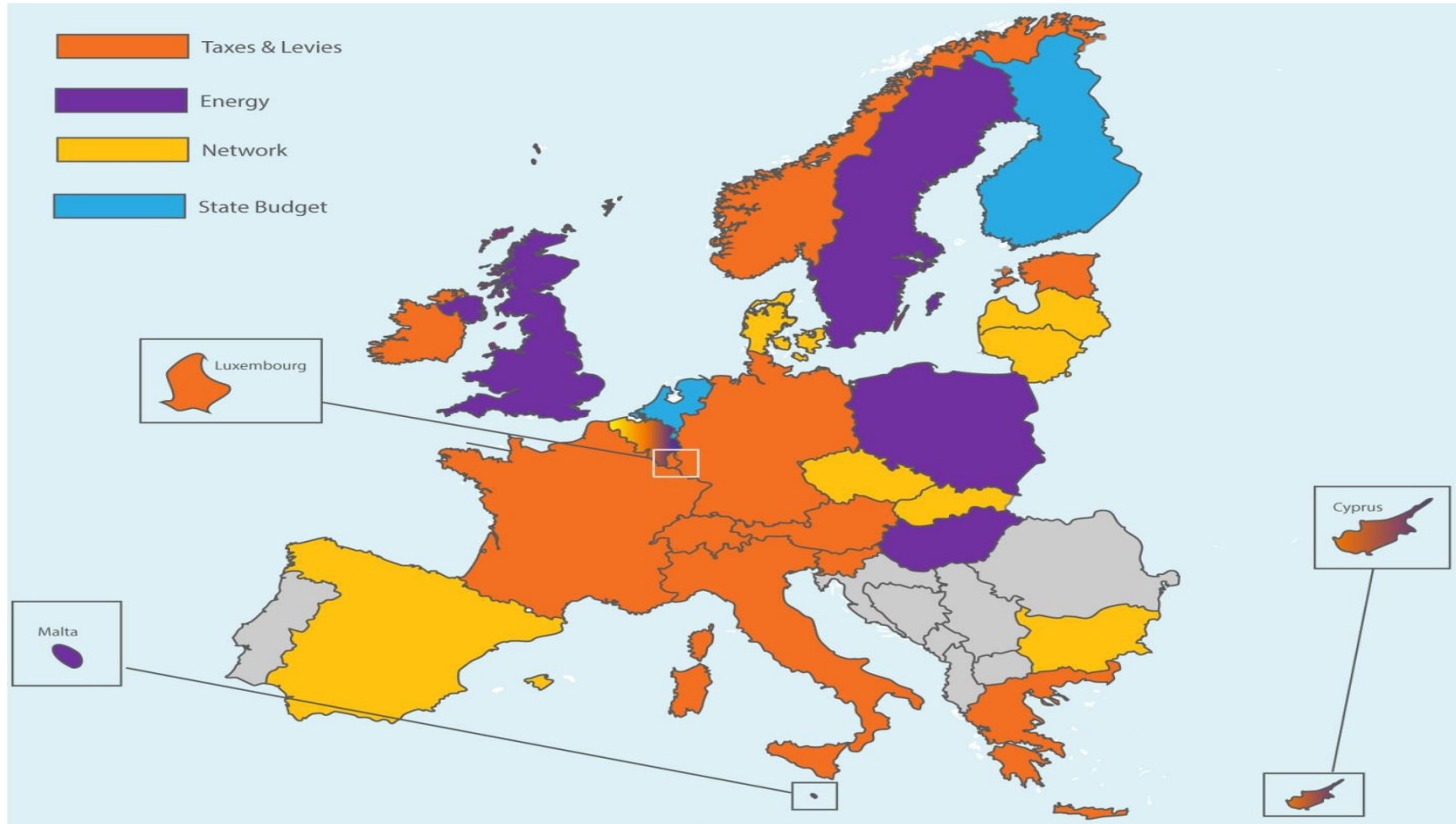
Calculation of the price produced from RES



Technology of producing electricity	Feed in tariff for 2016 in MWh	Feed in tariff for 2017 in MWh
hydropower with total installed power of installation of electricity producer		
to 100 kW including	111,27	111,25
from 101 kW to 200 kW including	109,17	109,15
from 201 kW to 500 kW including	106,84	106,80
from 501 kW to 1 MW including	105,15	105,11
from 1 MW to 5 MW including	97,98	97,95
solar energy with total installed capacity of electricity producer to 30 kW located on the building	88,89	84,98
wind energy	62,49	44,18
incineration or co-incineration cogeneration		
purposely grown biomass except cereal straw	92,09	70,31
waste biomass except cereal straw	96,90	74,30
cereal straw	107,21	92,17



Political support of energy prices across EU





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