



THE RULES GOVERNINIG CHARGES FOR CONNECTION TO THE ELECTRIC NETWORK AND INCREASE IN CONNECTED POWER

NYS PSC and HERA Partnership

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Review of current situation

AMENDMENTS TO THE GENERAL CONDITIONS OF ELECTRICITY DELIVERY

(Article 14, August 12, 1997)

“Electric-power facilities required to connect new customers will be built by the electricity supplier by contribution funds”

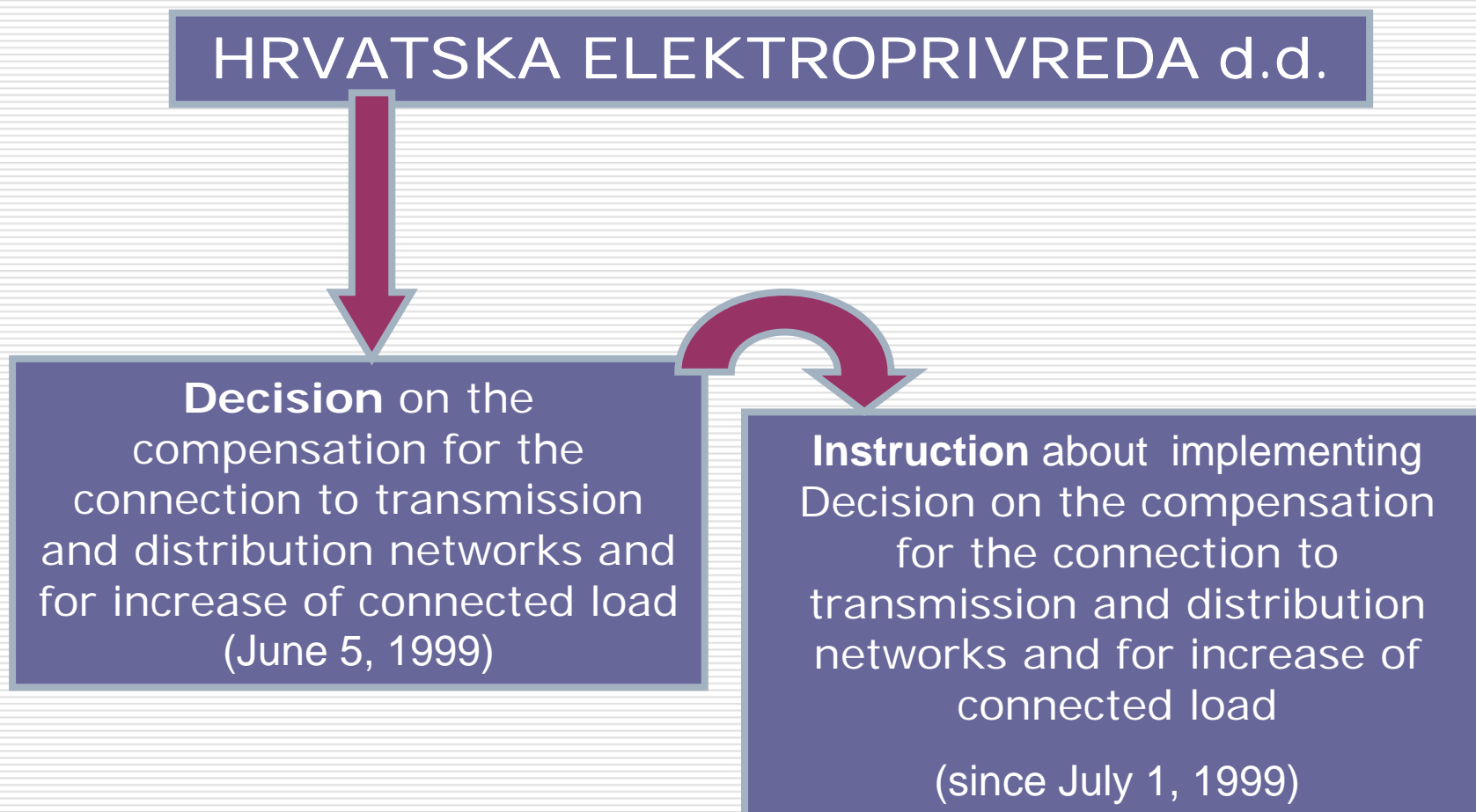
Rules on Building Electric Power Facilities Using the Contribution Funds for the Connection of Customers to the HEP's Electric Power Network

Decision on the compensation for the connection to transmission and distribution networks and for increase of connected load



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Review of current situation





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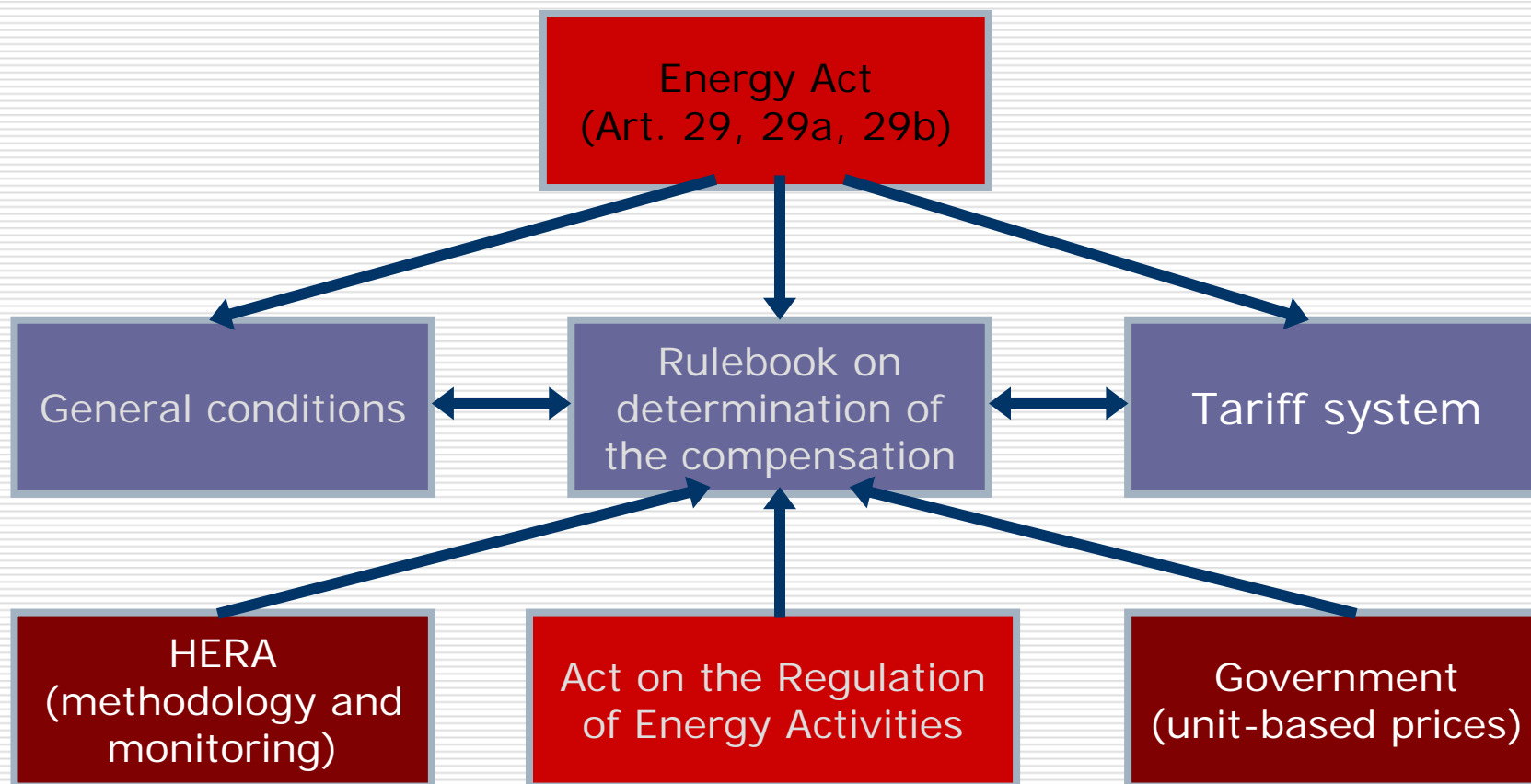
Review of current situation

- ❑ Differences in usage of Decision in distribution area and different conditions for customer network connections due to:
 - usage of various unit-based prices and margin of +30% for network connection on all levels, and
 - absence of systematic internal control of Decision and Instruction usage.
- ❑ Understatement for usage in location connections with progressive connected power, so-called special zone (commercial, industrial, business,...).
- ❑ Understatement for establishing HEP's share in expenses settlement in establishing technical conditions in network.
- ❑ Decisions do not establish connection compensation on transmission network for customer.
- ❑ Disputing legislative basis of decision making and implementation process.



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Legal framework





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Legal and sublegal guidelines

- The Energy Act defines:
 - **methodology** of establishing compensation for the connection to transmission and distribution network and connection power increase,
 - Connection compensation as expense which customers and producers pay according to benefit which realize through connection,
 - compensation structure and
 - elements of **technical conditions** for connection.
- The Electricity Market Act:
 - commits system operator to ensure network access by **transparency and impartiality** principle, and
 - determines system operator's **responsibility** for making connections according to prescribed rules.
- General Conditions:
 - determine **conditions** for network connection and increase in connection power (through consent and Contract on network usage).



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Application guide – general rules

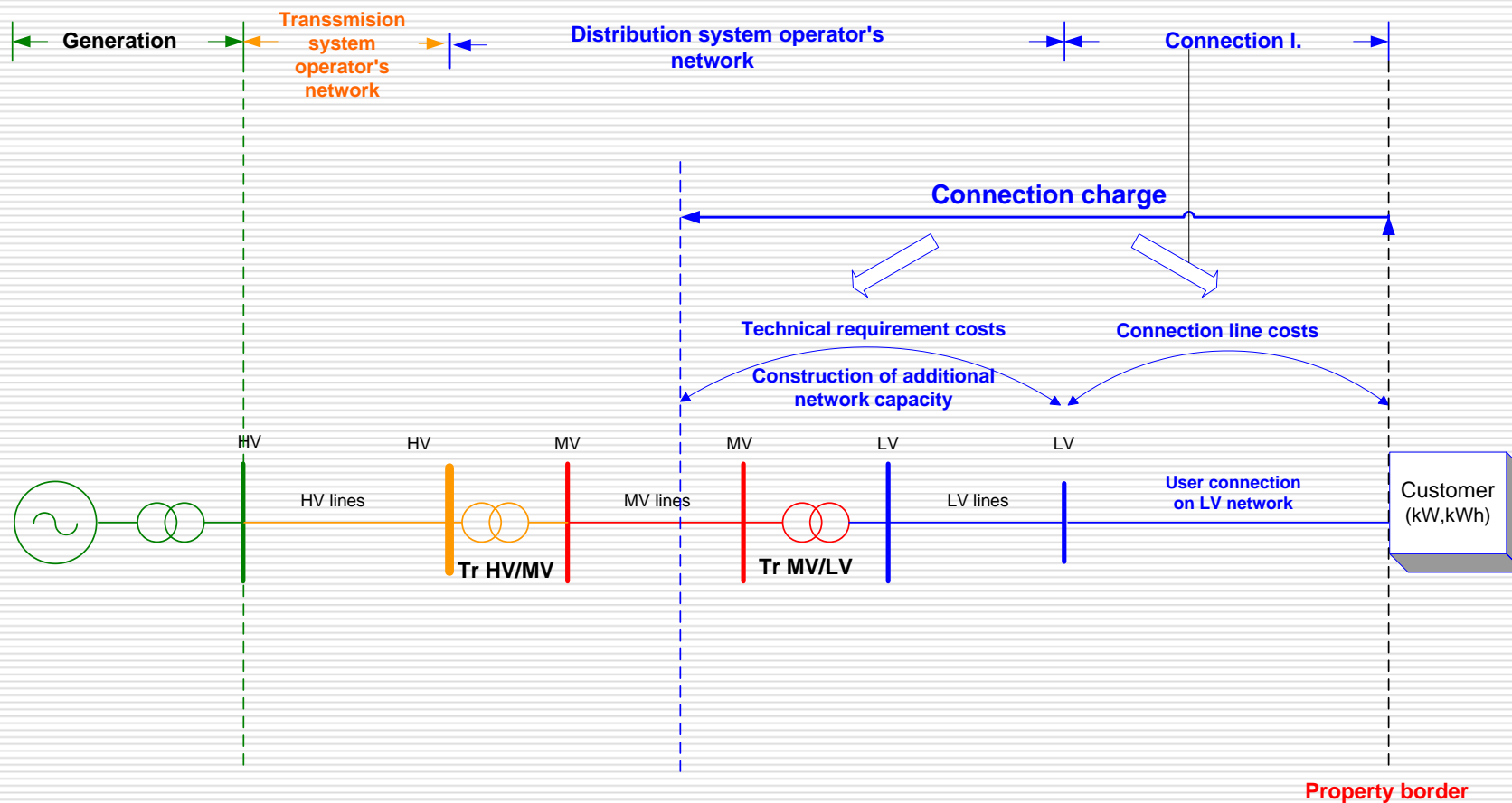
- These rules regulate methodology for calculation charges for connection to electric network and are obligatory for customers or producers, considering:
 - connection and
 - increasing connected power

- Connection charge is in function for financing **construction of connection lines** and making **technical condition in network**.



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Connection charge





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Methodology for calculation of connection charge

- Methodology includes basic part founded on average unit price of connected power. In some cases that methodology is supplemented with methodology based on real costs of connection.
- Methodology is set up in the following way:
 - connection voltage level (low voltage, medium voltage and high voltage),
 - type of network user (customers and producer),
 - on low voltage according to connected power (inclusively up to 30 kW and over 30 kW) and
 - special cases regarding connection to network (special areas, special connection functions)



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Basic methodology for calculation of connection charge

- Connection charge for connection to 0,4 kV (**low voltage**)
 - Inclusively up to 30 kW $N_{NN1} = c_{NN1} \cdot P$
 - Over 30 kW $N_{NN2} = c_{NN1} \cdot 30 + c_{NN2} \cdot (P - 30)$
- Connection charge for connection to 10(20) kV i 35(30) kV (**medium voltage**)
 - $N_{SN} = c_{SN} \cdot P$
- Connection charge for connection to 110 kV (**high voltage**)
 - $N_{VN} = c_{VN} \cdot P$



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Cases in which basic methodology is used

- ☐ For all LV customer connections, when there is no need for network reinforcement by construction or reconstruction of MV lines 10(20) kV or transformer stations 10(20)/0,4 kV.
- ☐ For all LV customer connections when there is need to create technical conditions by construction of MV line 10(20) kV or transformer station 10(20)/0,4 kV, if real connection costs do not exceed connection fee amount for more than 20%.
- ☐ For all connections on MV and HV, connections in special areas if real connections costs do not exceed fee amount for more than 20%.



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Principles for calculation of real connection costs

- ❑ Cost estimates that are used are based on real needs and on usage of standard equipment and solutions.
- ❑ Publicly available unit costs are used which are obtained through public procurement procedures defined in the Law on Public Procurements and based on standard work norms.
- ❑ Real connection costs include:
 - On **LV** costs of constructing connection, customer's share in costs of creating technical conditions in LV and MV network,
 - On **MV** costs of constructing connection, customer's share in costs of creating technical conditions in MV and HV network (survey) and
 - On **HV** costs of constructing connection (survey) and costs of creating technical conditions in HV network (survey).



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Customers' share in costs of creating technical conditions

- ☐ On **LV** in proportion to the power of feeding TS 10(20)/0,4 kV
- ☐ On **MV** in proportion to the power newly established capacity of feeding line and/or feeding transformer and/or feeding transformer station
- ☐ On **HV** customer covers the total costs of creating technical conditions based on the survey
- ☐ **Producer** covers the total costs of creating technical conditions based on the survey



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Customer's share in real costs on MV

When connecting customer's building to MV, customer pays part of total costs of creating technical conditions in network according to one of the following principles:

- ☐ When constructing and/or reconstructing line 10(20) kV or 35(30) kV on the same voltage level regarding the connection voltage, in proportion to customer connected load and total permissible load of the new or reconstructed line, taking into consideration the permissible voltage drop and the possibility of back-up supply and/or
- ☐ When constructing and/or reconstructing a transformer station or transformation 110/10(20) kV or 35(30)/10(20) kV or 110/35(30) kV, in proportion to customer connected load and rated power of new transformer, decreasing transformer rated power by operative reserves of 20% and/or
- ☐ When constructing and/or reconstructing line 110 kV or 35(30) kV on the first highest voltage level regarding the connection voltage, in proportion with customer connected load and transformer rated power in transformer station that is supplied by the line in the manner that it decreases transformation power by operative reserve of 20%.



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Conclusions on the Rulebook

- ❑ Defined provisions guarantee a fair and objective approach in sharing financial obligations between new customers and operator in the name of current and future customers.
- ❑ Customer and operator settle corresponding share in financing creation of technical conditions in network according to their own benefit.
- ❑ Customer, thorough his connection, does not finance those portions which the network operator will charge to another future customer.
- ❑ New subject is introduced – area organizer; additionally, mutual relationships between area organizer and network operator are defined.
- ❑ Simple and unique connection fee calculation in special areas.
- ❑ The Rulebook supports the Croatian Government's project of constructing entrepreneurs' areas in local and regional self-government units.



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Thank you for your attention!