“High voltage electricity line between Armenia and Georgia (regulatory framework)”
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The power system of Armenia
1. Full self-sufficiency in generation capacity
   – Working capacity 2700 MW, at peak load 1700 MW
2. Diversification by type of generation
   – NPP – 40% of internal demand
   – HPP – 35% of internal demand (of which 9% small HPPs)
   – TPP – 25% of internal demand
3. Diversification by sources and routes of natural gas supply
   – Two main gas pipeline:
     • the northern route from Russia
     • the southern route from Iran
4. Commissioning of the new thermal CC units
   – YerTPP – 220 МВт, Hrazdan-5 – 440 МВт

5. Development of small HPPs
   – 283 MW were commissioned
   – 115 MW are under construction

6. Life extension of the existing NPP up to 2027

7. Construction up to 2027 of new TPPs and HPPs with total installed capacity about 800 MW

8. Construction and commissioning new NPP in 2027
9. Development up to 2027 of renewable energy recourses (wind, solar, geothermal) with total installed capacity about 400 MW

10. Existing interconnections

- Two 220 kV overhead lines Armenia-Iran, 400 MW
- 220 kV overhead line Armenia-Georgia, 200 MW
- Two 110 kV overhead lines Armenia-Georgia, 150 MW
- 220 kV overhead line Armenia-Turkey, 200 MW – out of operation
The Power System of Armenia

Existing interconnection Armenia - Georgia

SS Ninotsminda
SS Gyumri-2
SS Vanadzor-2
SS Alaverdi-2

SS Gardabani
SS Sadakhlo

Border Armenia - Georgia
The Power System of Armenia

Existing interconnection Armenia - Iran

SS Shinuhayr

SS Agarak

220 kV

125 MVA  63 MVA  63 MVA

110 kV

to Iran
Investment projects
Armenia is implementing major investment projects for the integration into the regional power market, which will create a reliable infrastructure for regional trade and transit of electricity.
1. Construction of new 400/500 kV overhead lines and back to back HVDC substation with installed capacity up to 1050 MW will create a reliable asynchronous connection with Georgian power system and through it with the regional power systems (Russia, Turkey)
Investment projects

Implementation of the project will include following stages:

– I stage – up to 2018 construction of the first converter unit of «Ayrum» back to back HVDC substation with 350 MW installed capacity and substation facilities, construction of new 400 kV substation «Ddmashen», 400 kV overhead line «Ddmashen-Ayrum », 500 kV overhead line «Ayrum-till boarder with Georgia»
Implementation of the project will include following stages:

- II stage – construction of the second converter unit of «Ayrum» back to back HVDC substation with 350 MW installed capacity with the extantion of interconnection installed capacity to 700 MW in 2021.
Implementation of the project will include following stages:

- III stage – construction of the third converter unit of «Ayrum» back to back HVDC substation with the extantion of interconnection installed capacity to 1050 MW in 2027, construction of the second circuit of overhead line «Ddmashen - Ayrum»
Investment projects

2. Construction and commissioning up to 2018 400 kV double circuit overhead line Armenia-Iran with 800 MW installed capacity. Implementation of the project will increase total capacity of interconnection up to 1200 MW.
400 kV power system of Armenia
Financing of the investment projects

1. Cost of the I stage of “Construction of new 400/500 kV overhead lines and back to back HVDC substation with installed capacity up to 350 MW” is 127.4 mln €, from which 85 mln € financed by German KfW bank.

Cost of the II stage, also financed by German KfW bank.

Consultant of the project is German company FICHTNER.

2. Cost of the “Construction and commissioning up to 2018 400 kV double circuit overhead line Armenia-Iran with 800 MW installed capacity” project 107.0 mln €, financed by Iranian bank of export and development.

Construction works are implementing by Iranian company Sanir.
In addition to infrastructure projects, Armenia develops legislative, regulatory and contractual basis with Georgia and Iran to create transparent conditions for trading and for the economic cooperation.
Legislative, regulatory and contractual frameworks

Armenia plans to harmonize the structure and rules of the market to maximize the benefits of regional integration. In this context, it is planned to carry out a critical analysis of the current market structure and to prepare steps for modernization of the market in order to provide more flexible and well structured and tariffs.

В этой связи, планируется провести критический анализ нынешней рыночной структуры и
Conclusion

Commissioning of mentioned infrastructure projects will create a reliable interconnection North-South.

Parallel operation of Russia, Georgia, Armenia and Iran establishes mutually beneficial conditions for the cooperation in electric power sector.
Thank you!