

## The Russian power market – senseless and merciless.

### What to do with that?

Russian electricity prices are still perceived as ones of the lowest in Europe (about 27- 30 euros per MWh wholesale on average) although they have been rising a way faster than inflation rate during last 15 years. Does it mean that Russian power market introduced back in 2000s during pageant market reform is functioning successfully and its architects can take credits for that?

Absolutely not.

Relatively low prices for electricity here at wholesale market are due to regulated and lowest in Europe domestic prices for gas in first place as well as a glut of generation of approximately 20-40 GW (the first figure is an estimation of state regulators which count from a quite high level of necessary reserves, while the second is an assessment of consumers and independent observers based on comparison of peak demand and available capacity). This glut was created during and because of so called DPM (Dogovory postavki moshnosti – Capacity Delivery Agreements) program, adopted in 2008-2010, which brought to the market about 30 GW of capacity but on out of market principles. As a result a certain pressure to the market of variable operating costs (Day ahead and Balancing markets) became the factor pushing prices down but at the same time DPM has substantially increased the prices at capacity market where fixed costs are recovered in the Russian model, which is very similar to its US prototypes, at least on a first glance.

But the share of new, effective but expensive generation built on DPM basis still is just about 15 % of the total installed capacity while the overwhelming volumes of electricity is produced by old depreciated soviet times power thermal stations. This generation often runs with low efficacy, but with low gas prices efficiency is not so important on the market as new capacities are unable to push old ones from the competitive segments to sufficient extent. Moreover, the high capital recovery costs for new units “agreed upon” in the DPM program shrink the allowed share of fixed costs recovery at the so called KOM (Konkurentny otbor moshnosti – Competitive capacity selection) segment of the market, where old generation participate in a ostensibly competitive capacity auction.

The DPM, born in late 2000 as an instrument to bring and guarantee investments into thermal generation with an attractive return, became a universal tool within last decade used by the regulators for solving most of industry development issues. It was applied to nuclear and hydro plants construction, then to renewables, after that to waste incinerating plants, various subsidy programs to build new capacities and keeping tariffs low in economically unsound regions and finally by now days, closing the circle – to renovation program for the old thermal generation commissioned back in the Soviet Union 40-50 years ago. The applications varied but it was always assumed much higher then a market price level for capacity. There are many reasons and explanations why capital is so expensive in this country – 3-4 times higher than the current inflation rate, but the fact is that – while the relatively competitive portion of the generation prices formed at the Day ahead market stay low (15-20 euro per MWh), the capacity prices reflecting all those out of market costs are getting higher and higher. Its share has reached by now 50% of a total generation price and continues to grow. And all that is excluding grid tariff, comprising about 50% of end prices for low voltage customers except cross-subsidized population. The last phenomena are exactly the reason for so disproportionally high grid tariff share.

The retail supply charge contributes another 3-5 euros per MWh, and also has a tendency to rise.

In such circumstances large industrial consumers have initiated extensive use of their own power resources trying to loosen their dependence on the electricity supply from Unified Energy System. By now they have reached a certain success – they have built from 6 to 10 GW of their own generation and thus decreased expected consumption of power from the System. Bad to worse, it made the things even more complicated and brought additional financial load onto others staying in the System. A heated industry discussion during 2017-2018 on what to do next in general and in particular with obsolete and ineffective soviet steam turbine generation often working out of designated resource timeframe had been completed by adoption in January 2019 a new 41 GW DPM program for capacities renovation and refurbishing with return on investment at savory 14% rate. The program starts this year and finishes on 2031 while the payments are due up to 2046, totaling about 8 trillion rubles in current prices. And time and again all that festivity for generation owners will take place at the expense of consumers.

In some sense it's seen by observers as a point of no return for the competitive Russian electricity market and not only for that. Now it's become clear for many years to come how the market will live and will develop in the country. And it is also getting more and more clear for customers what to do with that. The regulators have set their ill "nonmarket" rules, and consumers are free to make their moves, which are not quite coincident with regulators plans.

One of such a move is a development of customer owned distributed generation and in a wider sense – distributed energy resources. Now even medium sized companies are able and even compelled to go in that direction. Till recently the main scheme here was simple and based on installing customer's own generation near their facilities and savings on grid charge, while remaining connected to the System for reliability and security reasons. Regulators want to fight this scheme by introducing so called "grid reserve" charge, which in effect would abolish most of advantages for such projects. In a sense they are right – if you use the common grid, even in standby mode, you have to pay for services rendered.

But there are other solutions. For instance, to install your own gas fired reciprocal engines with electric efficiency of 40-45% which are capable to provide flexibility on the market – buy power from the system when it is cheap and save when it is expensive. The Russian market is set so that capacity charges are applied in specific hour of the day – at maximum of the regional consumption. It is calculated post factum and averaged monthly, but if you can forecast this hour with a high probability and you have your own generation capable to feed your consumption at this hour your monthly bill for electricity might be cut by a goody 30-40%. In addition you may sell your power to others – not so lucky and rich enough consumers in your region – those who are at the category of less than 670 kW-installed capacity and are charged averagely with capacity payment included into a total price. At off-peak hours they may buy electricity from you with an attractive discount from a usual tariff and that will be a quite comforting price for you too, helping you to recoup your investments much sooner. And that works not only for such straightforward cases as stand alone facilities and generation nearby. It can be arranged also for multiple location distributed businesses such as trade and entertaining centers, retail networks of various types, etc.

Later on, when other new technologies get mature, new opportunities will arise – say, you can use your generation with energy storage – a combination which may spell death sentence to centralized power system as we know it for today. And this time is not far away.

There are companies, and our Agency is among them, which know how to arrange all that in compliance with tricky Russian market rules and its potential developments, e.g. they know not only how to invest in such projects but also how to manage investment risks on a long horizon. Talk to them if you want to run your project in a professional manner from the very beginning and until it becomes sound and solid. Think thoroughly what you need for your power future – to build and develop your own assets in a new world or continue to pay those inflicted charges to the benefit of traditional and in fact monopoly utilities for a long time more.