

Energo

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Week 40

❖ Who stands to gain

Ukraine's international lenders want to see greater energy sector privatisation, but it is the country's oligarchs that are snapping up the assets.

❖ Political obstacles

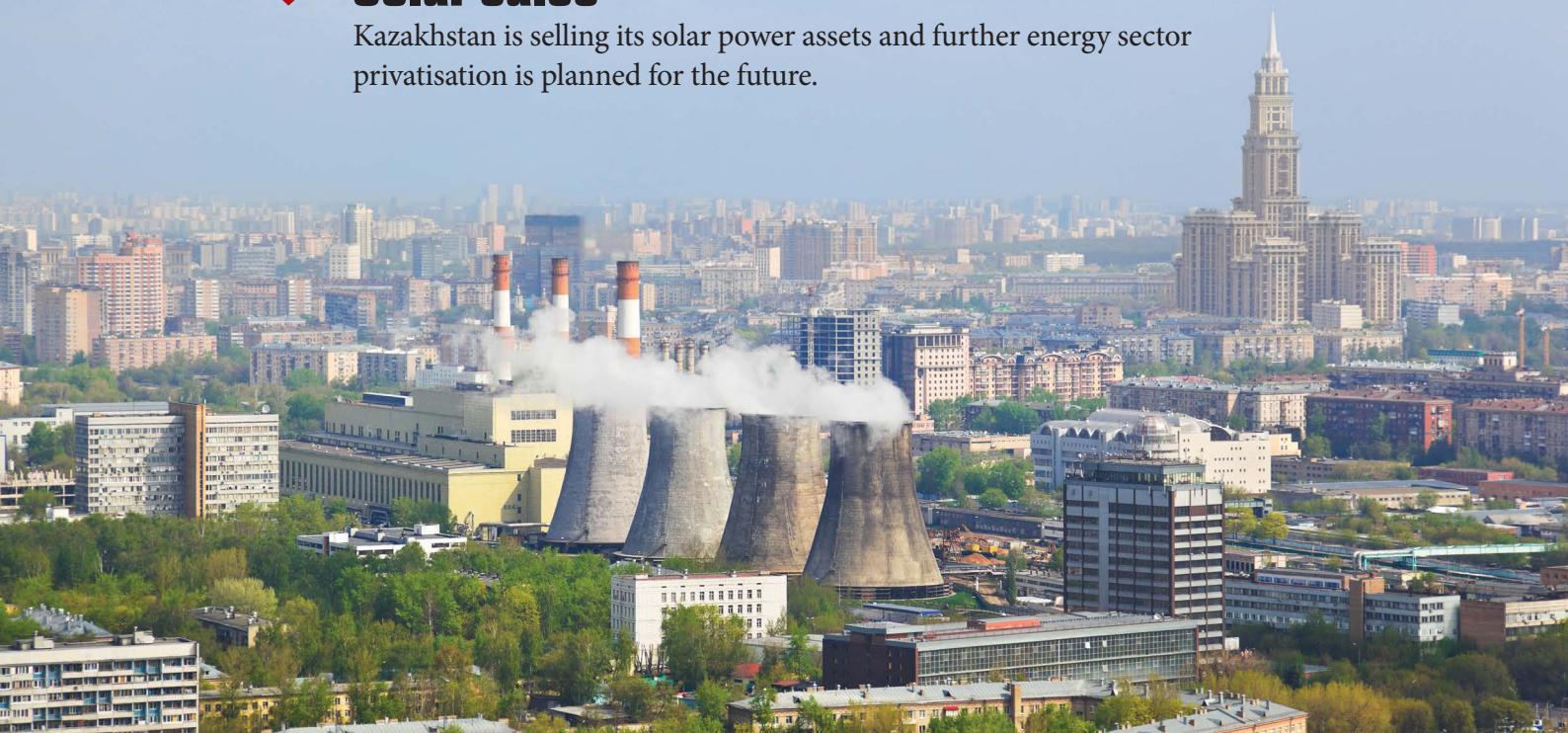
Czech plans for a nuclear expansion need funding, and politics could get in the way.

❖ Enlarging the state

Poland's PGE has been granted permission to buy EDF's local assets as Warsaw looks to wrestle control of its strategic energy sector.

❖ Solar sales

Kazakhstan is selling its solar power assets and further energy sector privatisation is planned for the future.





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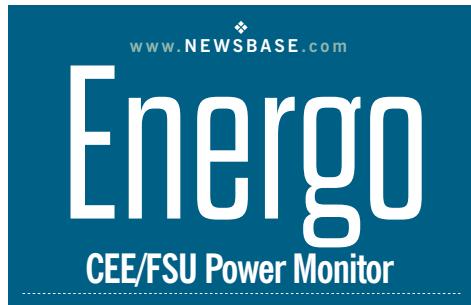
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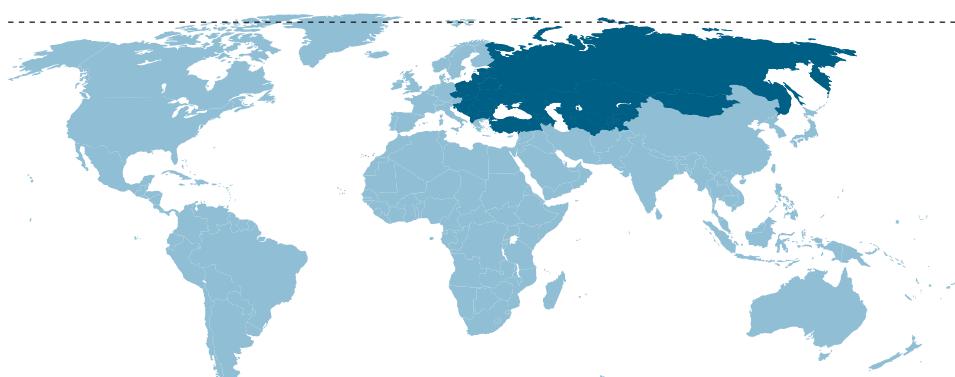
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Ukraine's energy privatisation a likely boon for oligarchs

Ukraine has moved to privatise its energy companies, but this has handed power over to some of the nation's powerful oligarchs, writes James Swierczewski

UKRAINE

WHAT:

Signs suggest that some of Ukraine's oligarchs have purchased shares in the country's energy companies.

WHY:

Ukraine has privatised shares in some of its assets to meet IMF obligations.

WHAT NEXT:

The success of the reforms will be judged in mid-November, with US\$4.46 billion at stake.

WHILE Ukraine needs privatisation in order to fulfil its obligations to the International Monetary Fund (IMF) and receive much needed credit, there are signs that the sale of state assets may go mainly to the country's already entrenched oligarchs.

In August, NewsBase Intelligence (NBI) reported on the government's sale of 25% stakes in five regional energy companies supplying electricity and heating. All five were bought by Cypriot holding companies owned by energy and mining oligarch Rinat Akhmetov. Three more offerings failed to find a buyer.

According to deputy head of the State Property Fund Yuri Nikitin, the minority shares would not entitle the buyer to dividends or grant decision-making power in the companies. However, the sale has attracted criticism both domestically from Ukraine's Federation of Trade Unions, and internationally from the World Bank.

There are 26 electric companies in Ukraine's market, some of them state-owned and others privately owned by some of the country's richest oligarchs such as Ihor Kolomoisky. While the World Bank criticised a lack of transparency in the recent sale, Nikitin defended it, citing IMF requirements as the reason it was carried out relatively quickly.

Disappointment

Despite the hasty sale, international observers have responded negatively to Ukraine's privatisation attempts. On October 5, the Interfax-Ukraine news agency reported that the European Bank for Reconstruction and Development (EBRD) was "disappointed" with the pace of privatisation in Ukraine.

The news agency quoted EBRD managing director for Eastern Europe and the Caucasus Francis Malige, who told journalists "there are no results (from privatisation), and this is one of the biggest failures," during an interview in Kyiv.

Malige also called the sale of minority stakes in the regional energy companies in August "far from international standards". He suggested that political reform, such as a new bill

on privatisation that has been introduced in Ukraine's parliament, could rectify the situation with privatisation.

Energy is not the only sphere in which privatisation has stalled. In June of 2017, the Ukrainian news agency UNIAN ran its own "audit" of Ukraine's remaining state property, its value, and the prospects for its sale.

According to their report, Ukraine's state property to be sold is divided into large objects valued over 250 million hryvnias (US\$9 million), and smaller assets under that amount.

Assets

One of the most important of the large assets is the Odessa Portside Chemical Plant, which produces ammonia and chemical fertiliser. The plant also features a pipeline that transports chemical products from Russia and other CIS countries for export. The value of the pipeline from Russia will be eliminated, however, once Russia completes its own transit hub in the Krasnodar region, which may be operational as early as early 2018.

Despite its importance to Ukraine, the chemical plant twice failed to attract any buyers at auction in 2016 alone. It is suspected that low commodity prices plus high maintenance costs may be scaring investors away from the enterprise.

In July, Interfax-Ukraine reported that an IMF spokesman had cited privatisation as one of three key requirements for Ukraine Extended Fund Facility programme, the other two requirements being pension reform and anti-corruption efforts.

Ukraine is set to have the last of three reviews of its reform results in mid-November of this year. If it receives favourable reviews, the country is set to receive almost US\$4.46 billion.

The IMF has praised the Ukrainian government's attempts to carry out its advice, stating that it "took tough measures to stabilise the economy with the support of a US\$17.5 billion IMF credit line". Land reform, another condition set by the IMF, has been postponed owing to its complexity and political complications for the country.❖

Czech NPP plans in focus – or not

Prague's plan to build extra nuclear reactors will need government funds, but upcoming elections make the source of the funding uncertain, writes Tim Skelton

CZECH REPUBLIC

WHAT:

The Czech Cabinet aims to build at least one new nuclear reactor at both the country's nuclear power plants

WHY:

Prague wants to use the nuclear industry to strengthen energy independence and power supplies

WHAT NEXT:

Elections on October 20 and 21 make the source of government funding uncertain

THE Czech Republic could be close to launching tenders for new nuclear reactors next year. But with national elections due later this month, there remains doubt over whether the offer will go ahead, and how the plants will be funded.

Grand ambitions

Nuclear power accounts for 32.5% of the Czech Republic's electricity needs. The country has six nuclear units at two sites (four at Dukovany and two at Temelin), with a total installed power generating capacity of 3,924 MW.

More importantly, however, Prague sees the industry as a way to strengthen its future energy independence and security of supply. Nuclear power is one of the pillars of its State Energy Policy (SEP), adopted in 2015, which targets the expansion of national capacity.

But the government is struggling to decide on a way to finance the construction and operation of new plants.

In June 2017 the Czech Cabinet approved a national action plan for the future of the industry that includes a proposal to build "at least" one new nuclear power reactor at both Temelin and Dukovany. The government's longer-term plan foresees a probable total of four new reactors.

CEZ's role

As the national nuclear operator, CEZ would have a major role to play in the development of any new units. But the majority state-owned utility has a chequered history with nuclear tenders.

In 2014, it cancelled a tender to build two additional 1.2-GW reactors at the Temelin plant after the government said it would not offer the project any public support. The bidders on that occasion – Westinghouse, Russian state nuclear agency Rosatom and Areva of France – all left empty-handed.

CEZ is now expected to come back with a new tender in 2018. And each unit is again likely to be specified at approximately 1.2 GW capacity. If all units are built, the estimated costs could run into tens of billions of dollars.

The government is said to be discussing possible ways to finance new reactors with potential investors. And despite CEZ's track record, six companies or consortia are expected to be in the mix again: China General Nuclear, EDF/Areva, Korea Hydro Nuclear Power, Mitsubishi/Areva, Rosatom and Westinghouse.

But the age-old question of who pays on the government side has not gone away. CEZ has previously said it cannot fund the new reactors without government assistance. The

Prague-based utility is profitable and 70% state-owned, but says it must also protect the interest of its minority shareholders by offering them some form of state guarantee.

Industry and Trade Minister Jiri Havlicek agreed. "Without the participation of the state, whether in the form of taking over CEZ's nuclear assets or some form of indirect state support, there won't be any new nuclear units," he said in a recent interview.

As a result, and as reported recently by *News-Base Intelligence (NBI)* (Energo, Week 38), the government has asked CEZ to look at scenarios for breaking up the company to help fund the work. Any sale might earn around 100 billion koruny (US\$3.88 billion), freeing up cash for the construction of nuclear plants.

What next?

There is a major stumbling block, however. With elections due on October 20 and 21, and the opposition ANO party enjoying a strong lead in the polls, the Social Democrat-led coalition may be out of office by the end of the month. Whatever grand ambitions it might have up its sleeve, it may have no further say in the matter.

Billionaire businessman Andrej Babis, one of the richest men in the country and the man likely to become its next prime minister, holds a different view from the current leadership. He wants to expand the country's nuclear capacity without the help of foreign investors, and has said no split of CEZ will happen on his watch.

In fact, if his party does win the election, his plan is to bring the utility even more directly under government control than it already is.

Babis recently told Bloomberg that CEZ should be in a position to finance the construction of at least one new unit at Dukovany on its own. "They can easily finance it," he said in September, adding that "CEZ has the best balance sheet among energy companies in all of Europe".

Whatever happens, time is of the essence. The four current units at Dukovany are Soviet-era reactors that could need to be phased out after 2035. And there are many ageing coal-fired power plants in the country that will also need to be retired and replaced in the nearer future.

Jan Stuller, the government's commissioner charged with overseeing new nuclear capacity, is aware of the problem. He has said that – no matter who is in charge of the country – a decision on how to finance new reactors and who should build them will still need to be taken no later than the beginning of 2018. ♦

Batteries to support doubling of renewable capacity, says IRENA

GLOBAL

THE International Renewable Energy Agency (IRENA) believes developments in the renewables sector could lead to a 17-fold increase in globally installed battery storage capacity by 2030.

In a recent analysis for the G20, IRENA found that more than 80% of all global electricity could potentially derive from renewable sources by 2050, with photovoltaic (PV) solar and wind power accounting for 52% of total electricity generation. But it has always been clear that energy storage will be central to the success of that energy transition.

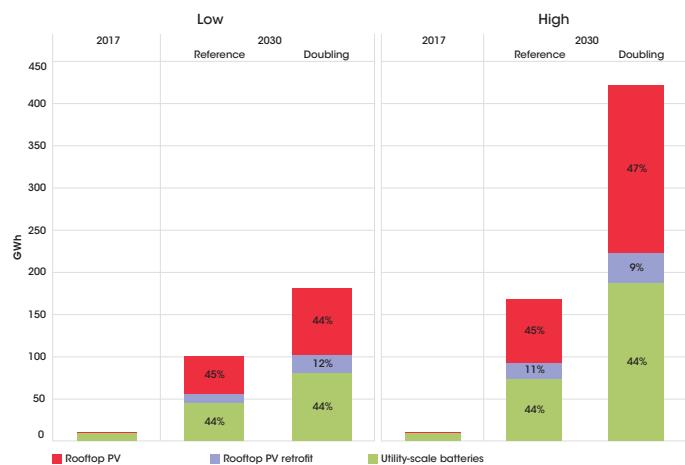
The agency's report, "Electricity Storage and Renewables: Costs and Markets to 2030," sought to assess the use of stationary (non-electric-vehicle [EV]) electricity storage in all its forms between now and 2030. It concluded that capacity could triple in a best-case scenario: if countries around the world double their share of renewables in the electricity system.

IRENA estimates that global stationary electricity storage capacity in mid-2017 is around 176 GW, but the bulk of this (around 96%) is in the form of pumped-hydro storage (PHS). Other technologies include thermal storage (3.3 GW), batteries (1.9 GW) and other mechanical storage (1.6 GW).

While batteries currently play a relatively minor role, IRENA sees them as a key technology in any transition to a sustainable energy system. Battery systems can boost the potential of variable renewable electricity, by storing surplus solar and wind energy and releasing it later when generation capacity falls – either in grid-scale or small domestic applications. They also offer a range of other benefits, from frequency response and reserve capacity to the upgrading of mini-grids.

Cheaper charging

One particular driver of battery storage is the falling costs of cells. From 2010 to the end of 2016, IRENA said the cost of lithium-ion (Li-ion) batteries decreased by as much as 73% for electric vehicle (EV) transport applications. And while Li-ion batteries in stationary applications have a higher installed cost, the report found that the costs of small-scale battery system installation in Germany had shrunk by a comparable 60% between late 2014 and mid-2017.



Battery storage systems also offer enormous future cost reduction potential. By 2030, IRENA believes, installed costs could drop another 50 to 66%, driven by the optimisation of manufacturing facilities and reduced use of materials. Battery lifetimes and performance will also improve, bringing Li-ion battery costs for stationary applications to below US\$200 per kWh by 2030 for installed systems, the report estimates.

Other battery storage technologies also offer large cost reduction potential. High temperature sodium-sulphur batteries could see their costs decline by up to 60%, while the total installed cost of "flow batteries" could potentially fall by two-thirds.

IRENA calculates that these developments could push installed global stationary battery storage capacity to 175 GW in 2030. Although its total capacity is also set to rise by 2030, the share of PHS could decrease to around 50% as batteries and other storage technologies take on a greater role. In its best-case scenario, total electricity storage could grow to almost 3,000 GW by 2050, although EVs would still account for the bulk of this total.

What is made most clear, however, is that batteries are already part of the new energy system. As the authors explain: "It is essential to note that storage now competes with other sources of flexibility to meet the needs of the electricity system of the future within efforts to decarbonise the electricity sector as a whole."♦

Battery electricity storage energy capacity growth in stationary applications by sector, 2017-2030. Source: IRENA.

EU calls on Commission to enact more ambitious climate targets

EUROPE



THE European Parliament has called on the European Commission to set out an ambitious climate change target to cut the European Union's emissions to zero by 2050 and to strengthen its interim 2030 targets.

Ahead of next month's UN climate change conference in Bonn (COP23), MEPs also called on the bloc to increase its attempts to grow the green economy by the time of the 2018 meeting (COP24), which is set to be held in Katowice, Poland.

Signatories to the UN Framework Convention on Climate Change (UNFCCC) must outline their long-term strategies to tackle climate change by 2020 and lawmakers have called on the EU to lead the way by setting out at this year's get-together a 2050 zero-emissions strategy that is in line with the Paris Agreement's aim of limiting warming to "well below" 2°C.

In addition, the Parliament called for climate change risks to be factored into investment decisions by private companies. Part of this would also be facilitated by the EC linking the EU Emissions Trading System (EU ETS), which is currently being reformed by the EU, to other carbon markets around the world. There are at present 18 carbon trading schemes around the

world – the largest of which is the EU ETS itself – but it will lose that title when China launches its long-planned carbon cap-and-trade scheme later this year.

The call for stronger targets, just days before the UK government publishes its own Clean Growth Strategy, highlights the possibility that the UK may face tighter climate targets if the EU adopts them before the country leaves the bloc.

The EU has long been seen as the global leader in efforts to fight climate change but that has changed since the Paris Agreement, with other nations embracing the need to cut emissions, particularly key emerging markets such as China and India. Meanwhile, since the election of US President Donald Trump, the US has reversed much of the progress it made under Barack Obama, and has signalled its intention to withdraw from the agreement.

Unsurprisingly, the Parliamentarians condemned the decision and have applauded the subsequent fierce condemnation by other nations.

As ever, all eyes will be on Bonn at the beginning of November, for what could turn out to be a particularly fractious conference as these discussions come to a head. ♦

Romania to review TSO progress after outages

ROMANIA



THE Romanian Energy Ministry is setting up a committee to assess the current situation of the national power grid, and to determine whether or not the grid operators have undertaken their investment plans as they promised.

The government approved the interinstitutional committee via a memorandum signed at a cabinet meeting. The committee will be made up of representatives from the ministry and from the national Energy Regulatory Authority. It will remain operational for a year, although the memorandum includes the possibility of extending its activities beyond that timeframe, "if it is deemed necessary," the ministry said in a press release.

The decision was taken after a series of extreme weather events across the country during the summer of 2017 led to major power outages. "We have had to deal with hundreds of broken pylons, broken lines and hundreds of thousands of Romanians without electricity every time," Energy Minister Toma Petcu said in a statement.

He added that although climate change could well have caused the weather to have become more violent than in previous years, the extent of the damage exposed the fact that the power distribution networks were in a very poor state of repair.

"It has been more than 10 years since major privatisations of the distribution networks, and we would have expected greater security and continuity in the supply," the minister added.

The electricity distribution grid in Romania is divided among several transmission system operators (TSOs): state-run Electrica, Enel of Italy, Czech group CEZ, and Germany's E.ON. Each one holds a regional monopoly to operate medium-voltage power lines.

The committee will check whether the investments announced by the TSOs were made in accordance with their plans, and whether they were in fact carried out correctly. Moreover, it will assess whether the foreign energy companies active in Romania were adhering to the same standards and levels of service as they provide in their home countries.

According to the Romanian Energy Strategy for 2016-2030, the national power grid will need estimated investments in equipment and technology worth around 500 million euros (US\$592.4 million) every year, in order for it to make the transition to smarter grids with bidirectional communication, efficient management and greater flexibility in operation. ♦



The Rybnik thermal power plant, southwestern Poland.

Warsaw greenlights PGE's takeover of local EDF assets

POLAND

THE Polish government's anti-monopoly watchdog confirmed last week that it had approved PGE's bid to acquire the local assets of France's EDF.

In a statement dated October 5, the agency, known by its Polish acronym UOKiK, said it had "issued an approval for PGE's takeover of EDF Polska". As a condition of the deal, UOKiK said, the state-controlled Polish utility will have to sell 100% of production from EDF Polska's largest asset, the coal-fired Rybnik thermal power plant (TPP), on the national electricity exchange until the end of 2021. The 1,800-MW Rybnik station is located in the southern part of the country, in Upper Silesia.

According to the watchdog agency, the sale will increase PGE's share of national generating capacity from 36% to 45%. Nevertheless, UOKiK said in its statement, the terms of sale will prevent the state-owned company from dominating the Polish power sector.

"The boost of PGE's market position will be reduced," the agency said. "All the electricity [that] has been to date generated by EDF Polska and sold to wholesale clients will be directed to the exchange. None of the entrepreneurs interested in buying the electricity will be discriminated against."

PGE unveiled its plan to take control of EDF Polska in May of this year, saying that the acquisition would help it gain market share while also expanding the government's control over utility services. It has estimated the value of the deal, which covers the Rybnik TPP and eight combined heating and power (CHP) stations, at 4.51 billion zloty (US\$1.25 billion).

The takeover ran into a snag last month, when UOKiK expressed concerns about the possibility that the deal might inhibit competition in the power-generating sector. Nevertheless, now that the agency has given the deal a green light, PGE hopes to complete the transaction before the end of 2017.

According to previous reports, PGE will not have to pass the costs of the acquisition on to its customers. The utility's CEO, Henryk Baranowski, said last week that that PGE would not need to borrow money to finance the deal. He also told reporters in Warsaw that the acquisition would not provoke any increases in electricity tariffs.

"In our view, this will have a positive impact on the market," he was quoted as saying by Reuters. "We do not expect any electricity price movements related [to] this transaction."♦

Baltics urged to expedite offshore wind development

BALTICS

THE European Forum for Renewable Energy Sources (EUFORES) has stepped up its lobbying of the Baltic States' governments to expedite their development of offshore wind.

EUFORES is a cross-party network of members of the European Parliament and the legislatures of individual EU member states.

EUFORES' president, Claude Turmes, who is also an MEP, signed a declaration in support of the development of wind power generating capacity in the Baltic Sea. "We are at a decisive moment of planning and deciding Europe's energy and climate policy for the years ahead," he said.

Turmes is an influential backer, having led some of Europe's key energy and climate policy reforms since 2000. The Baltic Sea Declaration on Offshore Wind was signed by officials from Estonia, Finland, Sweden, Denmark, Latvia, Lithuania, Germany and Poland. Its goal is to expand offshore wind power generating capacity across the Baltic region.

In addition to the EUFORDES moves, the European wind energy association, Wind-Europe, has urged Estonia to lead the region in pursuing offshore wind power generation. The association's CEO, Giles Dickson, said the Estonian government, which currently holds the EU presidency, should aim to build up political momentum behind the development of offshore wind and replicate the advances in the field that have been made in the North Sea.

The EUFORDES declaration that was handed over to Estonia's government covers several aspects of regional co-operation in the Baltics. It identifies the need to establish stable and clear legal frameworks, whilst also urging better co-operation on spatial planning and grid connection.

A first step towards achieving these objectives is to ensure that governments draft clear national energy climate plans that spell out the volumes of offshore wind that they intend to deploy post-2020.

Growth trajectory

WindEurope recently published a new analysis of wind power scenarios for the Baltic Sea up to 2030. The group said that the region could become the second largest for offshore wind in the world, with the potential for capacity to expand from the 1.5 GW that is installed today to around 9 GW by 2030.

Signs of the pace picking up are already apparent. Estonian wind developer Nelja Energia recently announced it was moving forward with plans to build the country's first offshore wind farm near the island of Hiiu-maa. It is anticipated to comprise of 100-160



wind turbines with an aggregate capacity of 700-1,100 MW. And Tuuliki Kasonen, general manager of the Estonian Wind Power Association (EWPA), told *NewsBase Intelligence* (NBI) a second site had also been identified for a new wind farm.

"One of them, [the site] near Hiiumaa, is at an advanced stage and the other, in the southwest, is through environmental impact evaluation. We hope to have the first installations [generating power] by 2020," she said.

Construction of Hiiumaa wind farm is scheduled to start in the second half of 2018, with commissioning slated for 2020.

Yet while Tallinn makes progress, Lithuania's prospects appear more muted. Aleksandras Paulauskas, president of Lithuania's Association of Wind Energy Producers (LVEA), told NBI: "We cannot expect a breakthrough in the field until 2020, by which stage the amendments to the Law on Renewables Energy are due to be passed."

He said political pressure had delayed the deployment of offshore wind in the country. "[The amendments] were supposed to go into effect in 2016, but were put off owing to the severe competition among different lobbying groups," he said.

Paulauskas said that three Lithuanian companies had cleared the regulatory hurdles to begin work on offshore wind projects, but he said there was a lack of political will to get them off the ground. The government is currently heavily focused on developing gas-fired power capacity that uses LNG imported via Klaipeda as feedstock, which he said "has created unfair conditions to clean energy sources."♦

GE, Siemens eye build contract at Serbian TPP

SERBIA



US and German engineering giants General Electric (GE) and Siemens have placed bids to build a new thermal power plant (TPP) in Serbia, according to Russia's TASS news agency.

A tender was recently launched by Russia's state-owned Gazprom Energoholding for construction of a 140-MW station in Pancevo, in the northern Serbian province of Vojvodina.

GE teamed up with Turkey's Gamma to submit an offer in the tender, while Siemens paired off with Greece's Metka, Gazprom Energoholding's president, Denis Federov, was quoted as saying by TASS. "The envelopes were opened some days ago. We will provide details this week or next," he said.

Gazprom Energoholding revealed in 2015 that one of its subsidiaries, Tsentrenergoholding, had set up a joint venture with Serbian oil company NIS to construct the plant. The move built on a memorandum of understanding (MoU) the pair signed two years earlier. ♦

The planned station was initially expected to cost around 140 million euros (US\$165 million) to complete. The project partners have discussed raising its capacity to 208 MW in the future at an extra cost of 43 million euros (US\$51 million).

Construction work at the site was originally slated to start in 2015, but was stalled several times.

Gazprom Energoholding is the power arm of Russia's natural gas champion, Gazprom. NIS itself is 56.15% controlled by Gazprom Neft, Gazprom's oil producing division, while the remaining equity in the Serbian company is held by the local government.

The completed TPP will provide power to a nearby oil refinery owned by NIS, as well as a local petrochemical plant operated by HIP Petrohemija, which is also part-Russian owned. NIS also controls a smaller refinery some 100 km northwest in Novi Sad. The two facilities have a combined processing capacity of 7.3 million tpy (147,000 bpd). ♦

The planned station was initially expected to cost around US\$165m to complete.

EASTERN EUROPE

Poland buys coal from rebel-held Ukraine

POLAND



ANTHRACITE coal from the unrecognised Lugansk People's Republic (LPR), an area of Ukraine's Donbass region under the control of Moscow-backed rebels, is being illegally exported to Poland, the Polish newspaper Dziennik reported on October 4.

Any exports from Lugansk are illegal because it is beyond the reach of Ukraine's tax or customs authorities.

Trade with Lugansk and another Russia-supported breakaway region, the Donetsk People's Republic (DPR) has been illegal for Ukrainian entities as well, as decreed by Ukrainian President Petro Poroshenko last March.

But Dziennik found that Doncoaltrade, a firm linked to Oleksandr Melnychuk, a former deputy coal minister of the unrecognised Lugansk authority, has been taking coal from Lugansk to Poland via Russia.

In addition, the Ukrainian website Ukrainska Pravda found out that the son of former Ukrainian Deputy Energy Minister Yury Zuykov, Roman Zuykov, is Melnychuk's partner in Doncoaltrade.

Polish Energy Minister Krzysztof Tchorzewski confirmed that anthracite from the Donbass was reaching Poland, but he said only 11,000 tonnes of it was imported, adding that

this was enough for only one power unit per day.

But the Ukrainian website liga.net claimed on October 5, citing Russian statistics, that at least 94,000 tonnes of coal were exported from the rebel-held Donbass to Poland via Russia.

Tchorzewski's Ukrainian counterpart, Ihor Nasalyk, said it was sad that while Ukraine had had to turn to the US and Africa for anthracite, Poland was importing coal from "occupied territories," thereby "financing terrorism". He also told the Ukrainian TV channel 112 that he had learnt from the Polish journalist who wrote the article in Dziennik that coal from the rebel-held areas was exported not only to Poland, but also to other European countries.

Nasalyk said that Tchorzewski had assured him that Poland would stop the anthracite purchases in question. Ukraine has long suspected that coal from the rebel-held areas has been illegally exported to Russia.

Now it is clear that it has been re-exported from Russia to third countries as well. Ukraine's thermal power plants (TPPs) have been short of coal, so it has had to boost coal imports, particularly from Russia, and it is widely suspected in Ukraine that coal officially imported from Russia comes from Ukraine's own rebel-held areas. ♦

ENA in loan deal with HSBC Armenia

ARMENIA



ELECTRIC Networks of Armenia (ENA) revealed last week that it had secured a loan of 55 million euros (US\$65.1 million) from the local branch of UK-based HSBC Holdings.

In a joint press release, HSBC Armenia and ENA confirmed the bank's decision to provide the credit. They noted that the cash-strapped utility, which is the main provider of electric power in the former Soviet republic, intended to use the funds within the framework of a "larger investment scheme for ensuring long-term financial sustainability".

The loan deal will help "[sustain] efficient and cost-effective management of the Armenian electric system," the press release said. The funds will also help ENA optimise its debt portfolio by "[restructuring] ENA's previous shareholders loan," it explained.

Karen Harutiunian, the general director of the utility, stressed this point, saying that the credit would help the company improve its financial standing. "The deal will have [a] positive impact on ENA's financial recovery ... This financing will help us have [a] more secure, sustainable and efficient

company," he was quoted as saying in the press release.

Harutiunian also noted that HSBC Armenia had agreed to make the funds available without any government guarantees. In their statement, HSBC Armenia and ENA noted that they had been working together for 10 years. The new loan is one of the largest ever granted by the bank, they commented.

CEO of HSBC Armenia Paul Edgar said that the credit deal was an outgrowth of the bank's ongoing relationship with the utility. "This loan [is] based on the trust and long-standing partnership between HSBC and ENA," he said. "This marks our commitment to contribute to investments for developing [a] sustainable and secure energy sector in Armenia."

ENA was for many years under the management of Russia's Inter RAO. But in the wake of widespread protests against a tariff hike in 2015, the Russian company accepted a takeover offer from a company owned by Samvel Karapetian, a prominent Russian-Armenian businessman. At the time of the acquisition, ENA's debts totalled US\$220 million. ♦

Astana to sell off solar assets, more privatisation ahead

KAZAKHSTAN



KAZAKHSTAN'S national atomic company, Kazatomprom, is selling off three wholly owned subsidiaries and 40% of a fourth in a two-stage auction. The move comes as part of a privatisation plan approved by the Kazakh government in 2015.

The three solar companies are PV module producer Astana Solar, PV cell producer KazakhstanSolar and quartz and metallurgical silicon producer KazSilicon, which has been idle since 2015. They make up the entirety of Kazatomprom's solar holdings.

The three companies were set up in 2011 in partnership with a French consortium led by the state-owned French Alternative Energies and Atomic Energy Commission (CEA). The starting bid for the three companies together was set at US\$54 million.

Combined, they form a fully integrated PV manufacturing unit. Astana Solar produces polycrystalline solar cells and modules at a 50-MW plant in the country's capital.

KazakhstanSilicon produces wafers at a 60-MW factory in Ust-Kamenogorsk using European equipment. KazSilicon produced 5,000 tpy year of solar-grade metallic silicon in Ashtobe using Chinese equipment based on German technology, according to PV Magazine.

Bidding on the group of solar companies closed on September 23.

As an incentive for the sale, the government offered higher feed-in tariffs (FiTs) of US\$0.10 per kWh to solar projects made with domestically produced components. The FiT is a payment to independent energy producers for contributing to the grid.

Bids are being accepted for a 40% share in Kaustik until November 6 via the Kazatomprom website. The starting price for the share is US\$12 million.

Kaustik produces 30,000 tpy of caustic soda, 26,000 tonnes of liquid chlorine, 45,000 tonnes of hydrochloric acid and 6,600 tpy of sodium hypochlorite. Its products are used in the oil and chemical industries, medicine, food production and metallurgy.

Last week, Toshiba announced that it was buying back Kazatomprom's 10% share in its bankrupt US unit Westinghouse Electric for US\$522 million, after Kazatomprom exercised its put option.

A share of up to 25% in Kazatomprom itself is slated for sale under the state's privatisation plan in 2018, as is part of national airline Air Astana. Meanwhile, a stake in KazMunaiGaz (KMG) will be sold off as well by 2020 under the plan. ♦

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The starting bid for the three companies together was set at US\$54 million.

CENTRAL EUROPE

Poland restarts work on power capacity market, utility shares up

Energy Minister Krzysztof Tchorzewski has said that the Polish parliament is likely to start works on a power capacity market draft law, boosting shares in state-run utilities. Poland, which produces most of its electricity from coal, hopes to launch a capacity market in which producers are paid not only for generating power but also for keeping power plants online to produce electricity when needed.

It would help utilities run and finance the construction of coal-fuelled power stations as Warsaw may face power shortages in the future.

The draft of the capacity scheme law was sent to the lower chamber of parliament in July. Poland had hoped to implement the capacity scheme months earlier, but in November last year, the European Union proposed stricter limits on support schemes for reserve power.

European Commission Vice-President for Energy Union Maros Sefcovic earlier this year said that Poland could set up the power capacity market but under certain conditions.

REUTERS, October 11, 2017

Private miner warns of coal shortages in Poland

Poland faces coal shortages as the country's biggest miners may miss its 2017 output targets, said the head of private coal miner PG Silesia. The chief executive at state-owned miner PGG said last month the company was struggling to meet the demand for coal from

its major clients after cost-cutting led to lower investment.

He refused to provide details on this year's production figures. Its most recent plan was to produce around 32 million tonnes.

"The situation can be dramatic and everything depends on how much coal is produced at PGG. There is a difference if they produce 26, 30 or 32 million tonnes," PG Silesia's Michal Herman told reporters.

He said PG Silesia's output would amount to 2 million tonnes this year, but that the company sees demand at a few times the size of production.

Poland's energy minister said that Polish electricity demand growth would likely exceed 2% this year.

REUTERS, October 11, 2017

Hungarian geothermal plant gears for November launch

Hungary's first combined geothermal heat and power plant in Tura, in Pest County northeast of Budapest, is currently in the commissioning phase, with the official start of operation planned for November, according to reports. According to information released by Singapore-based geothermal developer KS Orka, the combined heat and power plant will have 7 MW thermal heating and 3 MW power capacities.

KS Orka plans to build up a portfolio of power plants in Southeast Europe with a total of 280 MW thermal heating and 100 MW power capacities before the end of 2021. Based on Icelandic technology, the project was given a capital injection by the HIPA, and subsequently, KS Orka purchased a 51% share from the Hungarian developers.

According to the HIPA report, the Turawell geothermal project is a heat and electricity cogeneration plant which uses geothermal fluid gained from wells to produce electricity

and to help heating greenhouses and nearby real estate in an environmentally friendly way. At the end of the cycle, the fluid is pressed back into the geothermal reservoir, enabling the production of environmentally friendly heating and electricity.

The technology comes from Iceland, where the heating of buildings is 90% solved through similar technology, and where 99% of power generation is based on renewable energy sources.

KS Orka revealed in May that the project company had signed an agreement on financing the facility with Erste Bank Hungary.

BUDAPEST BUSINESS JOURNAL (HUNGARY), October 10, 2017

EBRD to fund rooftop PVs in Poland

The European Bank for Reconstruction and Development (EBRD) is to lend 44 million Polish zlotys (US\$12 million) to Polish rooftop solar company Caldoris Polska to fund construction of at least 20 MW of photovoltaic (PV) panels for small and medium-sized businesses (SMEs).

The loan is currently pending final review. The EBRD explained that the project promotes subsidy-free renewable energy solutions in Poland.

Caldoris started seven years ago with a focus on solar thermal collectors, supported at the time by attractive incentives. In 2016, the firm changed its business model and began offering rooftop PV panels to SMEs. Within a year it had sold 4 MW of generation capacity to over 300 clients. The EBRD expects that Caldoris' business model will have "demonstration potential" in other market segments or countries.

NEWSBASE, October 10, 2017

BALTICS

RECK wins tender on supply of electric car rapid charging stations for 2 million euros

RECK company has won the tender for supply and maintenance of 70 electric car rapid charging stations announced by the Latvian Road Traffic Safety Directorate (CSDD), writes LETA, according to the information published on the internet website of the





► Procurement Monitoring Bureau. The total procurement value is 2.036 million euros.

RECK also won a tender for building the places for 30 electric car charging stations for 449,884 euros.

CSDD representative Rolands Rumba told LETA that the first 30 stations will be built and installed within the present procurement, while a new tender will be announced for construction on 40 other stations.

As reported, by the middle of 2018, as many as 70 electric car rapid charging stations will be built in Latvia. In total it is planned to install 150 electric car rapid charging stations. The project is implemented with co-financing from the European Regional Development Fund and the total cost is 8.34 million euros.

BALTIC COURSE (LATVIA), October 9, 2017

Lithuanian utilities sign energy saving agreement

On October 9, 2017, AB Litgrid, AB Amber Grid and UAB EPSO-G, implementing the Law on Efficiency Increase of Usage of Energy, have signed an agreement with the Ministry of Energy on energy savings. Under this agreement, Litgrid will initiate and (or) engage in measures for increasing energy consumption efficiency aiming to save 146.6 GWh of power in the period of 2017-2020.

Litgrid's main measures aimed at savings – modernisation of the transmission grid and installation of smart meters as well as other potential efficiency measures. In addition, Litgrid will strive to actively cooperate with business enterprises in order to reduce their energy costs.

LITGRID (LITHUANIA), October 9, 2017

Enefit wind farms produce 25% more electricity in September

Wind farms of Enefit Taastuvenergia, renewable energy arm of the state owned Estonian energy group Eesti Energia,

produced roughly 15 GWh of electric energy in September 2017, 25% more than in the same month of the previous year, informs LETA/BNS.

All Estonian wind farms produced approximately 50 GWh of electric energy combined during September.

During the first nine months of the year, wind turbines of Enefit Taastuvenergia produced 147 GW-hours and all wind generating capacities of Estonia taken together, 464 GWh of electric energy, Eesti Energia said

Enefit Taastuvenergia CEO Aavo Karmas attributed the increase in output to better wind conditions and improved dependability of wind turbines. He said that the dependability indicator of turbines in September was one of the best for 2017.

The amount produced by Enefit turbines, 15 GWh, is equal to the annual consumption of about 6,000 average households. Enefit Taastuvenergia produces electricity and heat from wind, water, biomass and mixed household waste. All capacities of Enefit Taastuvenergia taken together produced 27 GWh of electricity in September, 13% more than in September 2016. The amount of thermal energy produced during the month was 26 GWh, 52% more than the year before. The increase in thermal energy output resulted mainly from the operation of the waste incinerating unit at Iru just outside Tallinn, which sold significantly more heat to Utilitas Tallinn than in September last year.

BALTIC COURSE (LATVIA), October 6, 2017

BALKANS

Bulgaria's YTD electricity production and consumption rise

Bulgaria's power output rose by an annual 2.50% to 34,473 GWh in the period January 1 to October 8, according to data of the country's Electricity System Operator (ESO).

Data shows that electricity consumption increased by 5.66% on the year to 30,164 GWh during the review period.

Power exports fell 15.26% year-on-year to 4,308 GWh in the period under review. Bulgaria halted electricity exports from January 13 to February 9 to meet increased domestic demand amidst harsh winter weather conditions.

Renewable energy in the transmission system increased by 13.60% on the year to 1,023 GWh in the January 1 to October 8 period, while renewable energy in the distribution system increased by 4.13% to 1,499 GWh.

SEE NEWS (BULGARIA), October 10, 2017

Increase in NTC Value for Macedonia-Greece Power link extended

The value of the net transfer capacity (NTC) between Greece and Macedonia will rise by 50 MW between October 9 and 15 in the direction of Greece, Greek transmission system operator (TSO) IPTO said on October 4. IPTO added that this quantity will be allocated by the South East European Co-ordinated Auction Office (SEE CAO) on daily auctions in accordance with the relevant auction rules.

This increased NTC value is also valid for the period between 1 and 8 October 2017

NEWSBASE, October 5, 2017

Romania's energy output rises between January and August

Romania's energy output rose by 3.8% year-on-year in the first eight months of 2017, the national statistical office, INS, has said, citing provisional data.

The country's energy production totalled 14.02 million tonnes of oil equivalent (TOE) in the January-August period. Energy imports amounted to 8.28 million TOE, up 1.5% on the year.

Romania's electricity output and imports totalled 44.8 TWh in the first eight months of 2017, down 2.6% year-on-year.

In the eight months through August, Romanian thermal power plants generated some 18.47 TWh of electricity, up 12% on the year, while the output of hydroelectric power stations fell 27.3% to 10.19 TWh.

The production of the country's sole nuclear power plant rose 7.47% on the year to

► some 2.7 TWh in the review period.

Wind farms generated 4.76 TWh, up by 11.2%, and solar plants produced 1.44 TWh, up 0.8%, in the first eight months of 2017.

Final electricity consumption fell by an annual 0.7% to 36.35 TWh between January and August.

Romania's electricity exports fell by 16.8% year-on-year to 4.57 TWh in the first eight months of 2017.

The country produced 2.29 million TOE of crude oil, down 4.6% on the year, and 3.07 million TOE of coal, up 15.5% on the year between January and August. Natural gas production increased 9% year-on-year, reaching 5.4 million TOE.

In 2016, Romania's energy production fell by 7.2% to 20.47 million TOE.

SEE NEWS (BULGARIA), October 11, 2017

Turkey to break ground on Akkuyu nuclear plant by latest early 2018

Turkey's atomic energy authority is working on the Akkuyu nuclear power plant and efforts to hold the ground-breaking by latest early 2018 are underway, Energy Minister Berat Albayrak said.

Russia's Rosatom said last month that it aims to start work on its Akkuyu project in southern Turkey by the end of March.

REUTERS, October 11, 2017

EASTERN EUROPE

Russia's Rosatom eyes Dutch companies' participation in Lider icebreaker project

Russia's Atomenergomash power engineering company, the mechanical engineering division of Rosatom nuclear corporation, said it has signed memorandums of understanding with Dutch suppliers to shipyards, Coops & Nieborg and Machine-en Lierenfabriek C.Kraaijveld.

Under the documents, the possible participation of Dutch companies as partners of Atomenergomash in the project to build Russia's most powerful new-generation Lider-class nuclear icebreakers will be considered. The companies will also consider plans for cooperation in the shipbuilding field. The sides will discuss possible localization of producing the equipment of Dutch companies

at Atomenergomash's enterprises, also in the interests of the United Shipbuilding Corporation.

"Particular terms of fulfilling these contracts, dividing responsibilities of the sides, the list of items, prices, total cost, timeframe and conditions of supplies and carrying out works will be included in a separate contract," the company said.

Atomenergomash unites nearly 30 major manufacturing, scientific and research, and engineering enterprises across Russia and in other countries. It provides efficient solutions to atomic, thermal power energy, gas and petrochemical industry.

TASS (RUSSIA), October 9, 2017

Gazprom Energoholding interested in buying Reftinskaya GRES

Russian power utility Gazprom Energoholding is interested in buying the Reftinskaya GRES power plant from Enel Russia, CEO Denis Fyodorov said. "We are in talks with Sberbank," he said. Sberbank was appointed an organiser to collect offers for the facility.

Enel said in June it started the process of selling the Reftinskaya GRES plant. Russian power utilities EuroSibEnergo, Inter RAO and Rusenergosbyt said earlier they had no plans to buy the facility.

1PRIME.RU (RUSSIA), October 6, 2017

RusHydro paid coupons on series 04 bonds

RusHydro has paid coupons on series BO-04 (state registration number 4B02-04-55038-E-001P of April 1, 2016). In accordance with the

decision on securities issue, RusHydro made coupon payments on series 04 bonds with a coupon rate of 10.35% per annum on August 10, 2017 (at the end of the ninth coupon period).

As per decision on securities issue, RusHydro made coupon payments on series BO-P04 bonds with the coupon rate of 10.35% per annum on October 5, 2016 (at the end of the third coupon period). Total amount paid was 774.15 million rubles. Coupon payment amounted to 51.61 rubles per bond.

In March 2016, RusHydro successfully placed exchange-traded bonds of series BO-P04 in total amount of 15 billion rubles. The bonds mature in three years from the date of placement. The coupon rate was set at 10.35% per year, the lowest coupon rate among corporate marketable securities since June 2014. The bonds were included in Level 3 listing on MOEX.

RUSHYDRO (RUSSIA), October 5, 2017

OKB Gidropress has completed the first delivery of equipment for the Ostrovets NPP

OKB Gidropress, part of Russia's Atomenergomash, has completed the first delivery of equipment for the nuclear power plant under construction in Ostrovets, Belarus. This includes two sets of clamping devices for the plant's two units. The devices are used in the upper section of a VVER reactor to prevent vibration of reactor internals when it is operating. The Ostrovets plant - the first nuclear power plant to be built in Belarus - consists of two VVER-1200 type reactors to give 2,340 MW net capacity online. Ostrovets 1 is scheduled to



- start up in late 2018-early 2019.
ROSATOM (RUSSIA), October 6, 2017

Russia plans to auction 1 GW of renewables in 2018

Russia's energy ministry plans to hold auctions for almost 1 GW of renewable energy capacity in 2018, the Russian Association of Wind Power Industry (RAWI) said, citing first deputy energy minister Alexei Texler.

Texler, who was speaking at the Russian Energy Week event, said that 57 MW of solar and 899 MW of wind power capacity would probably be put up for tender next year.

In Russia's renewable energy auction this year, 1,651 MW of wind, 520 MW of solar and 49.8 MW of hydro projects were successful. The winners get 15-year capacity supply agreements. The successful wind capacity bidders were the Fortum-Rusnano partnership with 1,000 MW of projects, Enel with 291 MW, and VetroOGK, part of Rosatom, with 360 MW. Russia's legislation for renewables support calls for the installation of 3,350 MW of wind farms by 2024, RAWI said.

RENEWABLES NOW (UK), October 9, 2017

from 885.63 million manats to 1.46 billion manats.

The number of common shares of Azerishiq with face value of two manats each increased from 442.81 million to 730.31 million units, respectively, according to the decision.

AZERNEWS (AZERBAIJAN), October 5, 2017

Kazakhstan to begin supplying uranium to China

Kazakhstan's energy minister Kanat Bozumbayev has announced that the country will supply uranium to five nuclear power plants in China, beginning in 2019.

China is on schedule to complete the construction of a new power plant by 2019 when Kazakhstan will begin supplying uranium, Bozumbayev added.

Bozumbayev said Kazakhstan aims to turn its nuclear power into an important player in global fuel trade.

Kazakhstan is the world's biggest uranium producer, controlling 40% of production worldwide, with 12% of the world's uranium under its soil, the World Nuclear Association reports.

The Central Asian country has no enrichment centres or nuclear power plants of its own, mostly exporting uranium in the form of triuranium octoxide or pellets, both of which require further processing before being used by power plants.

The Kazakh state nuclear company, Kazatomprom, and China's CGNPC first announced a joint venture in May this year, aiming to produce ready-to-use fuel assemblies.

As of May 2017, China has 37 operating

nuclear reactors, with 20 more under construction, according to the International Atomic Energy Agency.

DAILY SABAH (ISTANBUL), October 11, 2017

Uzbekhydroenergo to participate in construction of Kambar-Ata HPP-1 in Kyrgyzstan

The JSC Uzbekhydroenergo plans to take part in construction of the Kambar-Ata HPP-1 in Kyrgyzstan, the press service of the Foreign Ministry of Uzbekistan reported. On October 6, Uzbekhydroenergo and the Kyrgyz National Energy Holding Company signed a memorandum on cooperation in implementation of the project on construction of Kambar-Ata HPP-1.

The document was signed during the visit of the Kyrgyz President Almazbek Atambayev to Uzbekistan. Atambayev earlier following the talks with Uzbek President Shavkat Mirziyoyev said that the sides agreed to build the Kambar-Ata HPP together.

As a result of his visit, the sides signed 5 more documents, including the agreement on supply of electricity from Kyrgyzstan to Uzbekistan in 2017-2018, the agreement on a joint use of the Orto-Tokoy (Kasansay) reservoir in Jalal-Abad region and the documents in the field of air transport and the international road traffic. The heads of states also agreed that they can finally resolve the issues on remaining 15% of the state border line.

AKI PRESS (KYRGYZSTAN), October 9, 2017

CAUCASUS & CENTRAL

ASIA

Capital of Azerbaijan's energy operator up by 65%

In accordance with the decision of Azerbaijan's Cabinet of Ministers, the authorised capital of Azerishiq (Azerbaijan's energy operator) has been increased by 64.9%,



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