



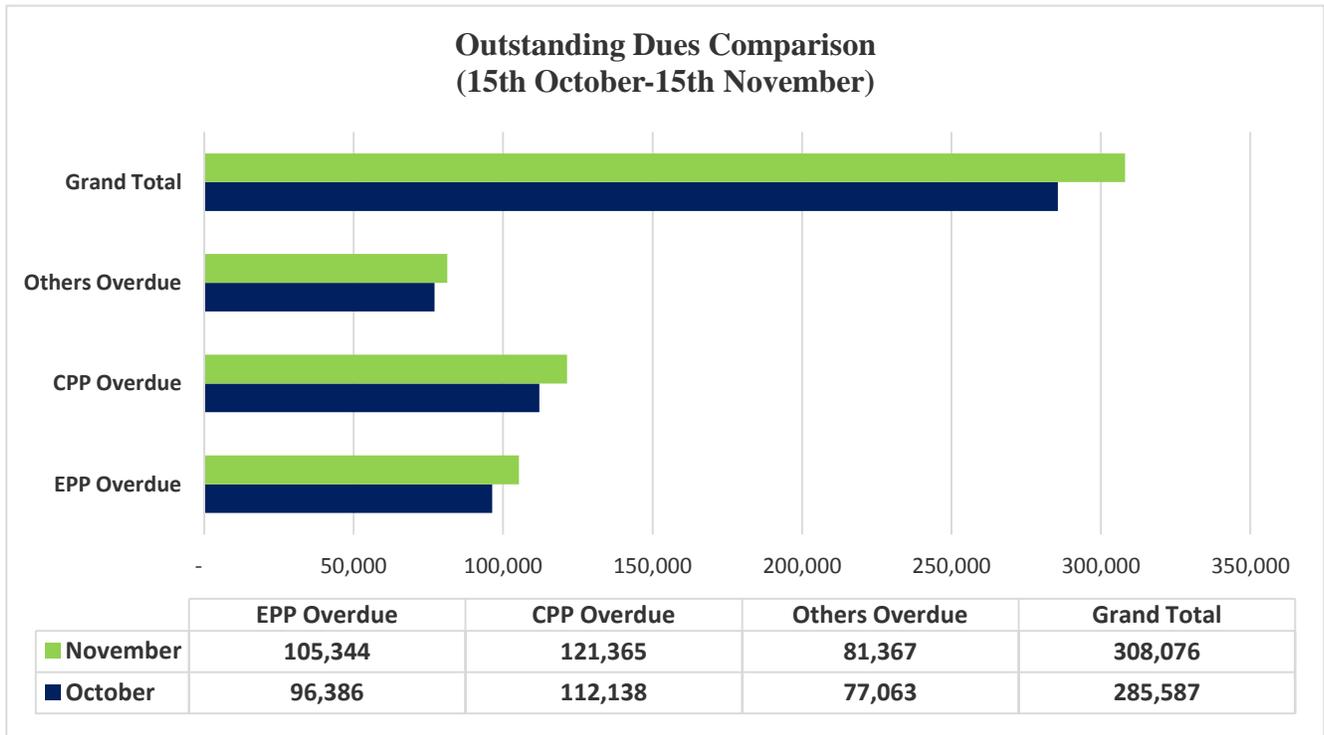
INDEPENDENT POWER PRODUCERS ASSOCIATION

MONTHLY NEWSLETTER

Welcome to the thirty-third edition of Independent Power Producers Association (IPPA) monthly Newsletter. The newsletter is published on a monthly basis to ensure regular dissemination of information to Member IPPs and other stakeholders, and also to provide a platform to discuss issues pertinent to the energy sector of Pakistan. We would like you to send us your feedback and comments on how to improve the monthly newsletter.

Monthly Infographics

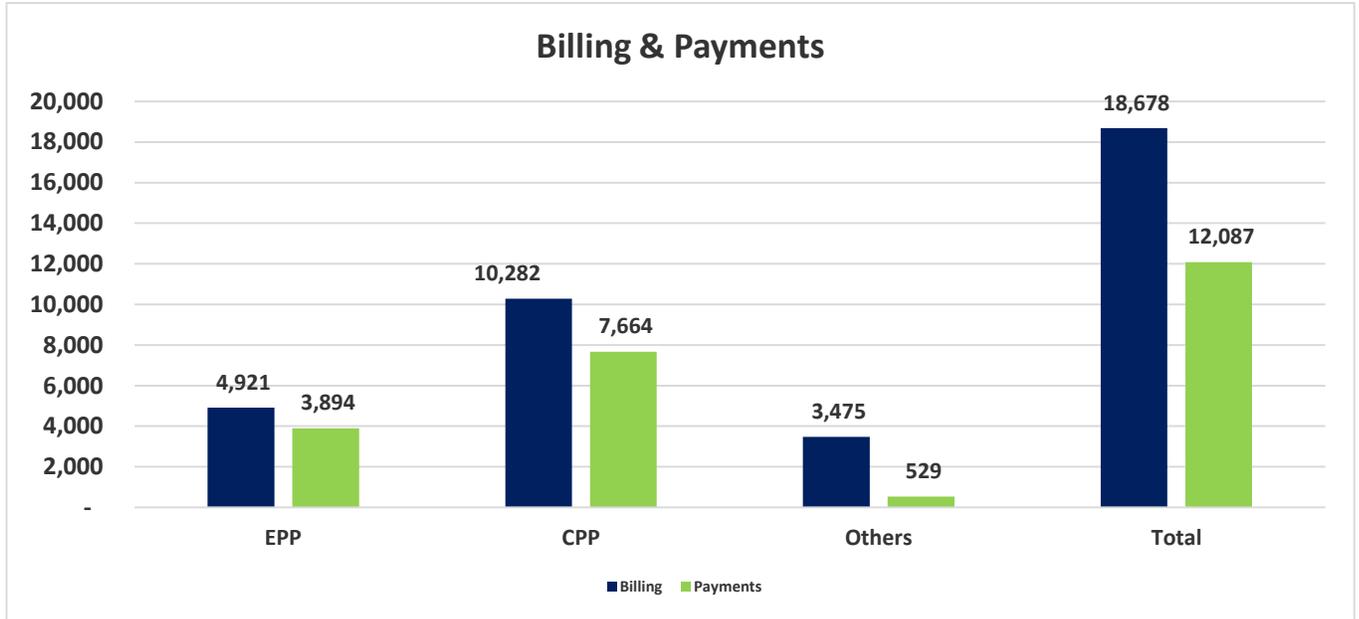
Outstanding Dues as of 15th November, 2019 in PKR Millions



Source: Member and Subsidiary IPPs

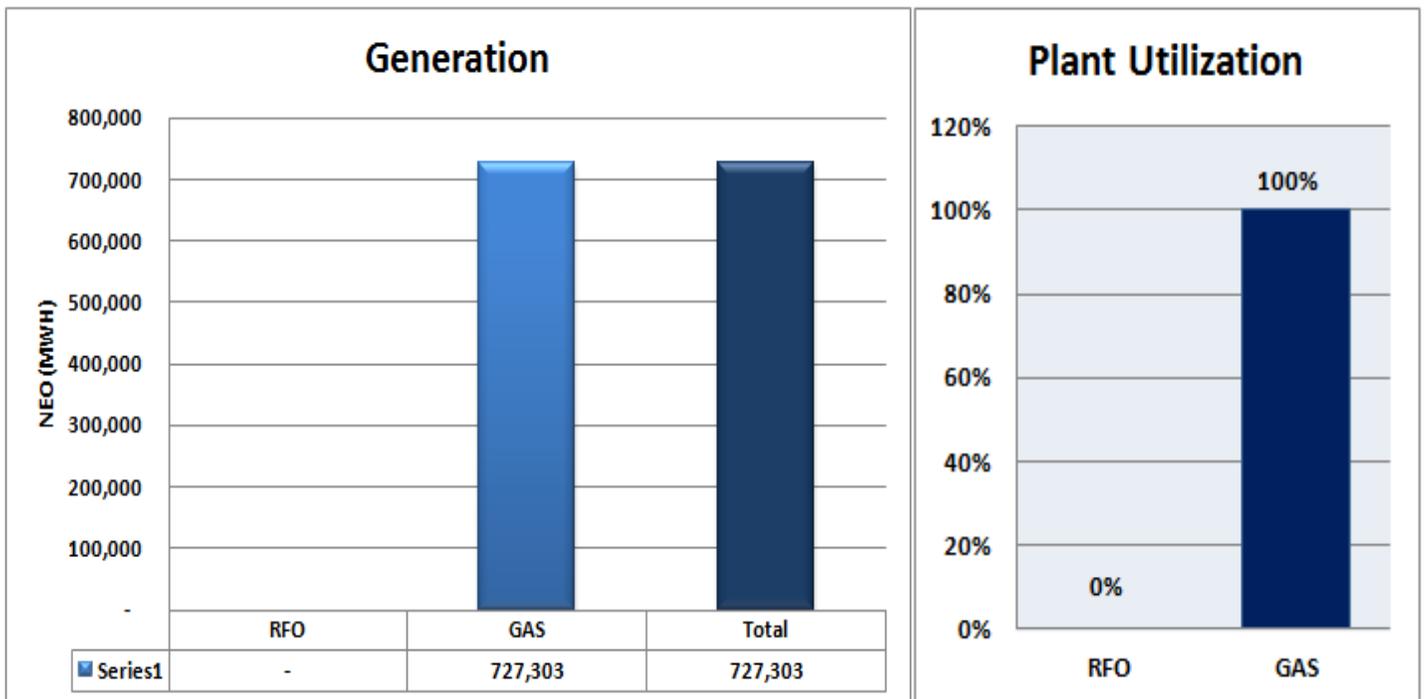
Monthly Infographics

Billing and Payments in November 2019 in PKR Millions



Source: Member and Subsidiary IPPs

Net Generation and Plant Utilization in November, 2019



Source: Member and Subsidiary IPPs

Privatization of two LNG power plants to be completed by end of FY2020, IMF assured

The Nation/29-12-2019

ISLAMABAD: Pakistan has assured the International Monetary Fund (IMF) to complete the privatization of two LNG power plants by the end of current fiscal year (FY2020). "Financial advisors were appointed for the privatization of two LNG fired power plants and the transaction structure was approved. The authorities expect to finalize the process by end-FY 2020," the IMF stated in its recent report on Pakistan. The privatization of loss-making Pakistan International Airlines (PIA) has not been included in the first phase but Pakistan Steel Mills and two LNG based power plants are included. The government is expecting to complete the privatization of two LNG power plants in next few months. The privatization of two LNG power plants including 1223 MW Balloki Power Plant, 1230 MW Haveli Bahadur Power Plant, SME Bank Limited would earn Rs300 billion for the government during current fiscal year. Finance ministry had projected Rs300 billion from privatization of two RLNG power plants.

IMF stresses on NEPRA legislation to curb Pakistan's circular debt crisis

Business Recorder/25-12-2019

ISLAMABAD: The International Monetary Fund (IMF) has stressed on legislation in Pakistan's power sector to tackle the issue of circular debt in this sector. "The quality of fiscal adjustment will start to have a larger and larger focus in the program. That will of course include tax policy reforms, something that will be of relevance for the following year budget. And then one other structural area which supplement the fiscal adjustment, is tackling

the issue of circular debt in the energy sector," said IMF Pakistan Mission Chief Ernesto Ramirez Rigo. Rigo said that the Pakistani authorities have put together a comprehensive strategy to address the flow and now this strategy has started to be implemented. "Likewise, there is need for the NEPRA [National Electric Power Regulatory Authority] Legislation that is regulators for the energy sector, to have more automaticity and the capacity to implement when necessary (inaudible) to support the reduction in circular debt. That's something that is a benchmark for the end of December, and we look forward to look at those reforms," he said. The IMF Pakistan Mission Chief further said that the independence of the State Bank of Pakistan (SBP) is important to them, "the legislation now is a structural — submitted legislation is now a structural benchmark for March." "This was originally set for the end of December 2019, but our technical team in the Legal Department, after looking at the necessary changes, and in consultation with the authorities we decided to spend some more time working on this to provide technical assistance, and we set the benchmark so that it would be more feasible, and still very ambitious, but more feasible."

KE plans to issue Rs 25 billion Sukuk

Business Recorder/25-12-2019

KARACHI: K-Electric plans to issue Pakistan's largest-ever retail listed Sukuk in private sector worth Rs 25 billion (green shoe option of up to Rs 5 billion) with seven-year tenor. VIS Credit Rating Agency has rated the planned bond AA+. A KE statement said senior members of K-Electric and Pak-Brunei Investment Co Ltd (Trustees for the Sukuk issue) signed the Sukuk documents along with representatives of HBL and NBP. Habib Bank is the exclusive Shariah

structuring advisor, while HBL and NBP are joint structuring agents for the transaction.

Energy sector circular debt soars to Rs1.6 trillion

The Express Tribune/19-12-2019

ISLAMABAD: The circulation debt of energy sector has reached Rs1, 665 billion, the Ministry of Energy officials told the Public Accounts Committee (PAC) sub-committee on Wednesday. The energy officials said that they had prepared plans to upgrade the transmission and distribution system including the reduction in circulation debt. The Asian Bank and the World Bank have approved the plan, while the IMF will approve it tomorrow. Leader of the House in Senate Shibli Faraz chaired the PAC sub-committee meeting. The Ministry of Energy officials briefed the committee on the overall deficit of the electricity distribution companies in the country and measures taken to address it. The session was told that credit would be taken to reduce the circular debit of the energy sector. In the first phase, Rs100 billion will be borrowed for which a sovereign guarantee will be given. It was further said that assets had been identified to ensure the guarantee. The committee convener directed that the work on audit paras for the evaluation plan regarding property guarantees on circular debit be completed by December 30. The meeting was told that under the head of electricity billing, an additional Rs229 billion from October 2018 to October 2019 had been received and the recovery process had shown an improvement by 1.13% as compared to last year.

The energy officials said that a plan had been chalked out to reduce the power distribution and transmission losses. Under the plan, the lines will be upgraded by 2047 and 30% cars will be using electricity as fuel by 2030. The National Transmission and Distribution

Company (NTDC) officials told the committee that financing of projects for 2025 would also be finalized by June next year. After the approval of these projects, the capacity of NTDC would be increased by 90%. Faraz said that the sole purpose of the committee was to provide cheap electricity to the consumers and control the circular debt. The officials from the Central Power Purchasing Company (CPPA) said that the demand of electricity of 23 billion units had increased as the company used to sell 71 billion units five years ago and now was selling 94 billion units annually. Power division secretary said that solarisation in Baluchistan was not a solution to electricity crisis. He said at present there were 39,000 registered tube wells but in reality, around 50,000 tube wells were functional using 60 horsepower motors for water pumping which was causing not just water depletion but also using enough electricity. The secretary maintained that a fresh feasibility study would be finalized by January next year to address the power issues in Baluchistan.

Centre allocates over Rs 7 billion for power infrastructure in ex-Fata districts

Business Recorder/18-12-2019

ISLAMABAD: The government has prioritized uplift of electricity infrastructure in the merged districts of former Federally Administered Tribal Areas (Fata) and has allocated record Rs 7.254 billion for electricity installations' rehabilitation, reconstruction, new grid stations, and village electrification. This was revealed at a meeting on matters relating to electricity in the merged district of former Fata under the chairmanship of Federal Minister for Power, Omar Ayub Khan. Pir Noor-ul-Haq Qadri, Federal Minister for Religious Affairs was also present at a meeting, which was attended by parliamentarians from these Districts, officials

from Tribal Areas Electric Supply Company, Peshawar Electric Supply Company, Pepco and Power Division. During the meeting it was revealed that work has already begun on construction of new feeders in various parts of these Districts and contractors have been mobilized. Work on new grid station and the laying of new transmission lines has also begun and a total of Rs 3.937 billion has been earmarked for the activity. It was revealed that out of Rs 2 billion earmarked for reconstruction and rehabilitation of electricity installations Rs. 1.4 billion have been disbursed. Similarly out of Rs 1.278 billion ADP, Rs 816 million has been released. A total of 440 villages of merged districts will be electrified with the allocation. A total of 94 feeders in the merged districts are to be bifurcated, reconstructed, or constructed under the allocated fund. This includes 11 feeders in North Waziristan, 10 in Bajour, 14 in Mohmand, 14 in Khyber, 11 in Orakzai, 15 in Kurram and 8 in South Waziristan District.

In Pakistan, coal share in power generation rises to 25%

The Express Tribune/17-12-2019

KARACHI: Pakistan has surprisingly used historically high amount of coal for power production, which accounts for around one-fourth of the total generation, helping reduce the average cost of electricity generation in October 2019. Coal-based power production increased over two times to 2,357 gigawatt-hours (GWh) in October compared to 1,116 GWh in the same month of last year, Arif Habib Limited said, citing the National Electric Power Regulatory Authority's (Nepra) numbers on Monday. The research house's data suggested that it was the highest-ever production based on the dirty fuel – coal – which came to around 25% of the generation mix. “Rise in coal-based generation was due to higher load factor and addition of China Power

Hub Generation and Engro Powergen Thar to the system,” said Arif Habib analyst Rao Aamir Ali. The share of coal in the total power production stood at 12% in October 2018. China Power Hub Generation Company (CPHGC) set up a 1,320-megawatt plant at a cost of \$2 billion at Hub, Balochistan under the China-Pakistan Economic Corridor (CPEC). The imported coal-fired plant started commercial operations by supplying power to the national grid station in August. The Engro Powergen Thar project of 660MW came on line in July. The local coal-fired plant was set up at an estimated cost of \$1.1 billion.

The share of oil-based power production fell next to nil in October 2019 compared to around 8% in the same month of last year, according to the data. The record high power production from coal, however, also became possible after the share of electricity generated from clean and low-cost local gas dropped eight percentage points to 12% in total generation in October compared to 20% in the same month of previous year. Accordingly, the share of imported gas – re-gasified liquefied natural gas (RLNG) – in electricity generation surged to 25% in the total production in the month under review compared to 23% in October 2018. The cost of power generation based on RLNG remained significantly higher compared to the electricity produced with the help of local gas. Hydel power production also featured prominently in the energy mix. The share of the clean and low-cost power remained unchanged at 25% in the total production in October 2019 on a year-on-year basis. Despite the massive ups and downs in power generation from different sources, the total generation, however, remained flat at 9,572 GWh in October 2019 compared to 9,574 GWh in October 2018. Cumulatively, in the first 10 months of 2019, the power generation remained almost flat at 109,026 GWh. During the month of October 2019, the cost of fuel in power generation went

down 7.9% year-on-year to Rs5.02 per kilowatt-hour (kWh). “The decline in fuel cost was led by the coal-based generation cost, which declined 8.3% year-on-year, attributable to 34% decline in coal prices along with induction of local coal-based power plants into the system,” said analyst Ali.

Rs800bn of circular debt stock to be shifted to public debt

Dawn News/16-12-2019

ISLAMABAD: Estimating power sector losses rising by four per cent since the financial year 2016 to 29pc, the Asian Development Bank (ADB) and the government have agreed to raise about Rs469 billion revenues through consumer tariff during the current fiscal year and shift about Rs800bn of the circular debt stock to public debt in three years. This is part of the Energy Sector Reforms and Financial Sustainability Programme under which the Manila-based lending agency disbursed \$300million loan to Pakistan last week for 25 years including five years of grace period at 2pc interest rate. “The plan will include (i) using the sales proceeds of some generation assets (ii) divesting power subsector transmission and distribution of SOEs (iii) rolling tariff subsidies preferably into a social assistance program targeting the poorest households and (iv) converting portions of Power Holding Private Limited debt stock into public debt,” Adviser to the PM on Finance and Revenue Dr. Abdul Hafeez Shaikh wrote to the ADB president. The two sides have also agreed under the program to notify electricity tariffs for all distribution companies in advance, before the beginning of every fiscal year, on estimated revenue requirements to ensure full cost recoveries in line with \$6bn International Monetary Fund (IMF) program. As a prior action, the government has notified quarterly adjustments for all the four quarters of FY2019,

“adjusting tariffs for Rs469bn of backlog”, the ADB said. The government is required that “FY2021 tariff is notified before July 2020, correcting the annual tariff notification cycle” to control accumulation of circular debt. The government has, in consultation with the lenders, updated the circular debt reduction plan to curtail accumulated payables and loans on PHPL. The new accumulation of circular debt has to be kept below Rs124bn for FY2020 and PHPL debt will be reduced and assumed as public debt.

This accumulation would further be reduced to Rs74bn in FY2021. The government has also committed to ensure that the Nepra amendment act that includes automatic quarterly tariff adjustment and institution of surcharges, as is the current practice for automatic fuel price adjustment is submitted to parliament for approval. The two sides have estimated that successful implementation of the plan would lead to the circular debt coming down to Rs50bn by 2024 instead of Rs450bn in FY2019 and weighted average cost of power generation to about Rs11 (about \$0.070) from Rs15 (\$0.097) per unit. The government has also given an undertaking to have at least one female board member in all the distribution, generation and transmission companies and privatization of two LNG power plants. The ADB said distribution companies (Discos) estimated 18.3pc transmission and distribution loss and 10pc of non-recovery of the billed amount, leading to almost 29pc of revenue loss that was 4pc higher than FY2016 levels. “This puts Discos in a negative spiral of limited investments and increasingly poor efficiency, making system losses a recurring cause of circular debt,” the ADB said.

CASA-1000: Pakistan initiates talks for electricity export to Central Asia

The News/16-12-2019

ISLAMABAD: Pakistan has initiated talks for export of electricity to Central Asian States such as Tajikistan and Kyrgyzstan by using open access clause, which is already part of Master Agreement under CASA-1000 project. According to a relevant senior official of Power Division, the experts of National Transmission Dispatch Company (NTDC) on behalf of Pakistan last week held crucial dialogue in Dubai with experts of Tajikistan on export of electricity. Earlier, Pakistan formally asked Tajikistan to invoke the open access clause in the agreement under CASA-1000 project paving way for two-way trade of electricity, as under the existing deal, Pakistan is bound to import 1000MW electricity per day at 9.50 cents per unit in summer season from May to October once this project comes into stream. And more importantly, Pakistan will also not bear electricity transit loss in Afghanistan in case of any subversive activity. Pakistan is now surplus in electricity and wants to export it to the Kyrgyz republic, Tajikistan and Afghanistan in the winter season by using the same structure of CASA project. Pakistan, the official said, by using the open clause, also aspires to export electricity to the countries, which will provide to Pakistan electricity in summer season under CASA-1000. The project will be completed with the cost of \$1.17 billion and apart from transmission line, converter stations will be constructed each in Tajikistan, Afghanistan and Pakistan.

DASU hydropower project's transmission line: WB all set to extend \$700 million additional financing

Business Recorder/16-12-2019

ISLAMABAD: The World Bank is all set to extend \$ 700 million additional financing for transmission line for Dasu Hydropower Project. World Bank Country Director, Patchamuthu Illangovan in a letter to Secretary Ministry of Water Resources, Muhammad Ashraf, has conveyed this. "Preparations for an IBRD loan of \$ 700 million for Dasu Transmission Line (DTL) are proceedings well. The World Bank plans to appraise the project from December 12, 2019 and to negotiate in the last week of January 2020. The project PC-1 has already been approved", he added. The World Bank appreciated the Water Resources Ministry and other stakeholders for extending support to get approval for the revised land rates and compensation for the Dasu land acquisition, which was approved by the Federal Cabinet on October 29, 2019. The Bank argued that the decision was of great significance for the project. The Deputy Commissioner notified the revised rates on November 27, 2019 and the Chief Secretary KPK is helping to ensure that the remaining process of land acquisition is completed appropriately and in a timely manner.

Renewable power producers seek tariff revision

The News/28-12-2019

KARACHI: A dozen alternate energy companies have approached the power sector regulator, seeking revision in their electricity generation tariff to incorporate the impact of change in financing mix and rupee-dollar exchange rates. The local currency has depreciated over 30 percent in a year. This rapid devaluation has left some businesses struggling. The cost of production has risen for almost everyone. Some are suffering more than others because they are unable to pass the impact to consumers due to regulatory price controls and competition. The power generation

companies, who get their tariffs fixed by the National Electric Power Regulatory Authority (NEPRA), have filed review petitions seeking revision in their reference generation tariffs. The petitioner companies include Master Green Energy, Tricom Wind Power, Gul Ahmed Electric, Din Energy, Act 2 Wind, Artistic Wind Power, Metro Wind Power, Liberty Wind Power 1, and 2, Nasda Green Energy, Lakeside Energy, and Indus Wind Energy.

Implementation deal signed for Thar coal-power project

The Express Tribune/17-12-2019

ISLAMABAD: The Private Power and Infrastructure Board (PPIB) has signed implementation agreement for Pakistan's largest Thar coal-based power generation project of 1,320 megawatts, paving the way for financing of \$1.91 billion as the cumulative project cost. "The project is based on state-of-the-art super critical technology. The signing of the agreement is yet another step forward by the government to encourage the tapping of domestic resources," said PPIB in a statement on Monday. Energy Minister Omar Ayub Khan, who is also the PPIB chairman, appreciated the efforts made to expedite the processing of independent power projects (IPPs) based on locally produced fuel.

NEPRA raises electricity tariff by Rs1.56 per unit

Business Recorder/27-12-2019

ISLAMABAD: The National Electric Power Regulatory Authority (NEPRA) has dropped another inflation bomb on electricity users, as it increased on Wednesday power tariff once again. The electric power regulator NEPRA has approved a hike Rs1.56 per unit increase in electricity prices, which would add a burden of Rs14.50 billion on the pockets of consumers.

As per details, NEPRA Chairman Tausif H Farooq chaired a request for increase in electricity prices in the wake of the Central Power Purchasing Agency's (CPPA) monthly fuel adjustment. The CPPA had argued in the petition that in the month of October, 25.48 percent of electricity was generated from water, 12.17pc was generated from local gas whereas, and 25.41pc was produced from imported LNG. Meanwhile, no electricity was produced from high-speed diesel. Furnace oil plants are running due to lack of gas. Due to this the cost of electricity was increased by Rs1.73 per unit. NEPRA approved raising the electricity tariff to Rs1.56 per unit instead of Rs1.73

A floating nuclear power plant has started to produce electricity in a remote region of Russia

CNBC/20-12-2019

PEVEK: A floating nuclear power plant has been connected to the grid and has commenced electricity production for the first time in a remote region of Russia. In a statement Thursday, Russia's state-owned nuclear company Rosatom said the Akademik Lomonosov had started to produce electricity in the "isolated Chaun-Bilibino network" in the port of Pevek, Chukotka, which is located in the Far East area of Russia. Described by Rosatom as the planet's "only floating power unit," it's envisaged that the Akademik Lomonosov — which set sail from the Russian port of Murmansk in August — will become an important part of the Chukotka area's power supply. It has two KLT-40C reactors, which have a capacity of 35 megawatts each.

While Rosatom describes the facility as a "first of a kind", the history of floating power plants stretches back decades: the U.S. converted a ship called the STURGIS into a floating nuclear power plant during the 1960s. Rosatom says the floating nuclear power plant is suited to remote areas and "island states" which need stable and in its own words, "green," sources of energy. Interest in the technology has come from North Africa, the Middle East, and Southeast Asia, it claims.

Renewables' share of electricity generation surpasses gas for first time in UK

CNBC/19-12-2019

LONDON: The U.K. saw electricity generation from renewables hit 28.8 terawatt hours (TWh) in the third quarter of 2019, according to figures released Thursday, just bettering gas-generated electricity. The Department of for Business, Energy, and Industrial Strategy's Energy Trends publication shows that renewables' share of electricity generation hit 38.9% between July and September. This record figure was also, for the first time ever, very slightly higher than the share for gas (38.8%). Electricity powered by nuclear fell to 18.4% compared to 23% for the same period in 2018. Coal accounted for 1.0%. Overall, fossil fuels'

share of generation dropped to 40.1% in the third quarter of 2019, which authorities described as a "record low." By contrast, low carbon electricity's share grew to 57.3%, a record high that was boosted by generation from renewables. Breaking the figures for renewables down, bioenergy generation in the third quarter of 2019 came to 8.9 TWh. Hydro was responsible for 1.4 TWh, a 58% increase compared to a year earlier that was due in no small part to what was described as "the wettest August since 2000." Wind generation hit 14.1 TWh, with onshore and offshore wind production growing by 24% and 43% compared to a year earlier. Solar photovoltaic production was 4.4 TWh, which represents a 2.8% decline. The end of the third quarter saw renewable electricity capacity reach 46.9 gigawatts, a 3.2 GW increase compared to a year before. "We've reached a historic tipping point with renewables outperforming gas for the first quarter ever," Rebecca Williams, head of policy and regulation at Renewable-UK, said in a statement.

West Africa's first large-scale wind farm starts generating power

CNBC/13-12-2019

SENEGAL: A project described as West Africa's "first ever utility-scale wind farm" has started transmitting power to Senegal's national electricity grid.

In an announcement Thursday, renewable power firm Lekela said that Parc Eolien Taiba N'Diaye (PETN) would produce electricity for Senegal across a period of 20 years. While the 158.7 megawatt (MW) facility has started to export power, construction work is still ongoing and due to finish next year. Once it is fully built, PETN will use 46 wind turbines supplied by Danish firm Vestas. Africa has huge untapped potential when it comes to renewable energy. According to the International Energy Agency (IEA) it is home to the "richest solar resources in the world" but has installed just 5 gigawatts of solar photovoltaics. This is less than 1% of the planet's total, the IEA says. In July 2019, Africa's largest wind farm, the Lake Turkana Wind Power project, was officially inaugurated. The 310 MW facility was opened by President Uhuru Kenyatta of Kenya. "We are pleased to note that Kenya is without doubt on course to be a global leader in renewable

energy,” Kenyatta said in a speech given at the launch. “This will not only ensure that our nation’s scenic beauty and unique ecosystems are preserved and protected for both present and future generations, but will also ensure that we become energy independent and that our energy supply will be safe as well as predictable,” he added. The project is made up of 365 turbines, each having a capacity of 850 kilowatts. It is located 600 kilometers from Nairobi in the Loiyangalani District, Marsabit County. Construction of the facility started in October 2014 and it began full commercial operations in March 2019.

Denmark plans \$30 billion offshore wind island that could power 10 million homes

Reuters 10-12-2019

COPENHAGEN: Denmark is moving forward with plans to build an artificial island tying in power from offshore wind farms of up to 10 gigawatt (GW) of capacity, more than enough to supply all households, as part of efforts to meet ambitious climate change targets. Denmark is home to wind turbine giant Vestas and the world’s largest developer of offshore wind,, and recently approved a law which targets reducing greenhouse gas emissions by 70% by 2030. The energy ministry is looking for the right location to build one or more islands surrounded by offshore wind farms with a total capacity of at least 10 GW - equivalent to 10 million European households’ electricity consumption. Denmark covered 41% of its electricity demand from wind energy in 2018, the highest level in Europe. The project is crucial to meet Denmark’s legally binding climate act, one of the world’s most ambitious, which was passed by a broad majority in parliament on Friday. But the plans could cost as much as 200-300 billion Danish crowns (\$29.5-44.2 billion), the vast majority of which will be financed by private investors, according to the ministry. Denmark, which has a population of around 6 million, has set aside 65 million crowns to research how the energy coming into the hub can be stored or converted into renewable hydrogen as all the power generated will not just be used by domestic customers. It hopes that new technology will make it possible to replace fossil fuels with renewable energy in sectors such as transport and industry.

Nigeria to boost LNG output to above 30 percent

Business Recorder/31-12-2019

ABUJA: Nigeria signed a major gas expansion deal on Friday, a much-needed collaboration with oil majors that Nigeria LNG said would boost its liquefied natural gas output by more than 30%. The agreement marks a moment of amity with international oil majors, even as a tax dispute and a new law increasing the government’s take on deep-water oil production have irked some companies. The final investment decision on the Train 7 processing unit at the Bonny Island plant was signed by Nigeria LNG partners state-run Nigerian National Petroleum Corporation (NNPC), Eni , Total and Royal Dutch Shell in Abuja. The new train is expected to boost output by 35% to 30 million tonnes per year, NLNG said in a statement, and will arrest a decline in Nigeria's LNG output. NLNG operates six LNG processing units, known as trains, on Bonny Island. The train 7 projects have been delayed for several years. A previous deadline for a final investment decision in the fourth quarter of 2018 was not met. The West African country is rich in oil and gas but has been struggling to boost its output of both resources.

Oil prices steady, on track for biggest yearly rise since 2016

CNBC/31-12-2019

NEW YORK: Oil prices held steady on the final day of the year on Tuesday, heading for their biggest annual rise since 2016, supported by a thaw in the prolonged U.S.-China trade dispute and supply cuts. Brent crude futures for March delivery, the new front month contract, were at \$66.66 a barrel, down 1 cent, by 0258 GMT. Brent for February delivery closed on Monday at \$68.44. U.S. West Texas Intermediate (WTI) crude for February was down 3 cents at \$61.65. Brent has gained about 24% in 2019 and WTI has risen roughly 36%. Both benchmarks are set for their biggest yearly gain in three years, backed by a breakthrough in U.S.-China trade talks and output cuts pledged by the Organization of Petroleum Exporting Countries (OPEC) and its allies. The White House’s trade adviser said on Monday that the U.S.-China Phase 1 trade deal would likely be signed in the next week. “Oil prices have followed the general de-risking drift into year-end

despite a rise in Middle East tensions and last week's bullish-for-oil-price inventory draws as the broader markets appear to be losing some of that holiday cheer," said Stephen Innes, chief Asia market strategist at AxiTrader. Tensions remain high in the Middle East after U.S. air strikes on Sunday against the Katib Hezbollah militia group in Iraq and Syria. Operations resumed at Iraq's Nassiriya oilfield resumed on Monday after protesters briefly halted production. Looking ahead, U.S. crude inventories are expected to fall by about 3.2 million barrels in the week to Dec.27, heading for a third consecutive weekly fall, a preliminary Reuters poll showed on Monday. U.S. stockpiles fell by 5.5 million barrels in the week to Dec. 20. The figures will be released on Friday.

US adds 2.6 gigawatt of solar photovoltaic in third quarter, new figures show

CNBC/12-12-2019

The solar market in the U.S. added 2.6 gigawatt of solar photovoltaic in the third quarter of 2019, with total solar capacity — which includes both photovoltaic and concentrating solar power — hitting 71.3 GW, according to a new report. The figures, released Thursday morning, come from the most recent U.S. Solar Market Insight Report from Wood Mackenzie Power & Renewables and the Solar Energy Industries Association (SEIA). Photovoltaic refers to a way of directly converting light from the sun into electricity. The SEIA describes concentrating solar plants as using mirrors "to concentrate the sun's energy to drive traditional steam turbines or engines that create electricity." The 2.6 GW of capacity added during the third quarter represents a 45% increase compared to the third quarter of 2018 and a 25% increase compared to the second quarter of 2019, the SEIA said. Breaking the figures down, the third quarter saw the U.S. residential market install 712 megawatts (MW) of solar. California led the way in this market, installing almost 300 MW. For 2019 as whole, Wood Mackenzie is forecasting year-over-year growth of 23% and expecting 13 GW of installations. To put things in perspective, China added 44 GW of solar photovoltaics in 2018, according to the International Energy Agency (IEA). In 2017, the country added 53 GW, the IEA says. While Thursday's figures are encouraging, there is clearly still work to be done for solar in the U.S. Figures from the Energy Information Administration (EIA) show that utility-

scale electricity generation sites in the U.S. produced around 4,171 billion kilowatt hours in 2018. Fossil fuels were responsible for 63.6% of this generation, while renewables accounted for 16.9%. Breaking the EIA's numbers down further, solar share of the total was just 1.5%. The U.S. figures come after SolarPower Europe published its first EU Market Outlook for Solar Power earlier in the week. According to its report, an estimated 16.7 GW of installations took place in the EU in 2019, a significant increase compared to the 8.2 GW in 2018. Spain represented the largest market for additions in 2019, increasing its capacity by 4.7 GW, according to Solar Power Europe.

Tesla delivers first China-made Model 3 sedans in just under a year

Reuters/31-12-2019

SHANGHAI: Tesla has started delivering Model 3 electric cars built at its Shanghai factory in just under a year since it began work on the \$2 billion plant, setting a record for global automakers in China, and said it would ramp up deliveries from next month. The US electric vehicle maker marked the start with an event on Monday where 15 Tesla employees received cars they had purchased, one who whom took the opportunity to propose to his girlfriend after receiving his new set of wheels. The China-made Model 3 sedans are priced 355,800 yuan (\$50,000) before subsidies. In comparison, its imported Model 3 vehicles start at 439,000 Yuan for the longer-range version and the standard range plus model costs under \$40,000 in the United States. The Shanghai plant, up and running in 357 days, is part of Tesla's plans to bolster its presence in the world's biggest car market. The automaker, which previously imported all the cars it sold in China, had said it wanted to start deliveries from the Shanghai plant before the Lunar New Year beginning on Jan. 25. "From now onwards China-made Model 3 vehicles will start running on China's large streets and small lanes," Tesla Vice President Tao Lin said at the delivery ceremony which was attended by employees and Shanghai government officials. China General Manager for the Silicon Valley carmaker Wang Hao said Tesla plans to ramp up Model 3 deliveries in January. The Chinese government has been supportive of the factory, the first wholly foreign-owned car plant and a reflection of Beijing's broader shift to open up its auto market.

MONTHLY ACTIVITIES OF IPPA

SSC Renewable Energy inches forward with registration and collaborations

In December 2019, the council spearheaded the formulation and distribution of its Annual Report for the year 2019. Resultantly, the SSC analysed the Labour Market Information (LMI) survey and incorporated them in the report to showcase the market realities in the sector. The analysis shows a dearth as well as opportunity for competent TVET graduates in the Renewable Energy sector. Overall, the Annual report 2019 provided information about SSC's major activities and other concomitant details.

The SSC also completed the draft documents for obtaining the license under Section-42 of the Companies Act 2017 from the SECP. Subsequently, the Convener presented the compiled documents to the concerned SECP office for preliminary review. The concerned officers informed of some minor changes which the council is currently pursuing.

The Convener of SSC-RE, also held a meeting with representatives from Rupani Foundation. Representatives from Rupani Foundation included the Chief Executive Officer (Wasim Samad) and Business & Outreach Specialist (Faiz Alam). The two sides discussed potential for training technician for Hydro Power, Solar Power and other Renewable Energy technologies. In addition, the meeting also broached potential measures to reduce gender capacity gaps in technical training.

Overall, the council remains engaged in several concomitant activities ranging from membership drive, sector mapping, PR campaigns and interactions with potential stakeholders and interested parties. With governmental oversight from NAVTTC, Technical support from GIZ, and international endorsement from Norwegian, EU and German Embassy; SSC-RE is constantly endeavoring to represent private sector's interest as per ground realities and dynamic challenges that present themselves.

IPPA members held a meeting

IPPA members held a meeting to deliberate on important matters. The meeting touched upon the topics in the agenda in an orderly manner. It was decided that discussion will continue in future meetings.

NATIONAL POWER POLICY: A VISION FOR THE FUTURE

The much-awaited National Energy Policy (NEP) is expected to determine the future of Pakistan's power sector. Energy being an integral part of economic order of Pakistan, it is incumbent upon the policy makers to ensure a sustainable NEP. The subsequent discussion will attempt to identify factors that are critical in making NEP sustainable i.e. will only consider sustainability factors for the power sector¹.

Sustainable policies are essentially forward-looking adaptive promises to all the stakeholders in power sector. Adaptive nature of the policy dictates that a policy would possess the humility of learning from past mistakes while forward looking element will have the foresight to accommodate for needs of future generations. Future oriented dimensions of such a policy would include making arrangements for: Sector Integration, Inclusiveness and Cultivation of Sector Development.

Accommodations for the future

Each of these elements contains inherent objectives. Inclusiveness will increase the political viability of the power policy via integrating the input of all the stakeholders. Multidimensional development orientation will create the bedrock for evolution that is part of any successful dynamic industry. Power Sector Integration will eliminate any coordination failures that result in lost economic value addition.

Power Sector Integration

Historical experience illustrates that policies devised in isolation will face increased friction during the implementation stage. Such holistic approach was broached by Renewable Energy Policy 2006² and Power Policy 2015³. This time around, policy needs to enact Positive Policy Planning and Capacity Building to ensure a harmonious approach on a larger scale.

Positive Policy Planning

The most important component of this integration will be taking guidance from Integrated Energy Plan. An Integrated Energy Plan (IEP) is expected to serve as a blue print. For starters, Government will base the issuance of new bids for power production on IEP. Similarly, investors will rely on IEP for their investment decisions. In the absence of such exigent guidance, the inherent risk of the sector will increase translating into more expensive electricity.

It is pertinent to mention that Integrated Energy Plan would seek guidance from Medium Term Budgetary Framework. Doing so would allow the power sector to grow in line with the economy and hence avoid issues such as "capacity trap" and transmission capacity inadequacy. However, the implementation of an IEP is only as good as the capability of the stakeholders managing it.

Capacity Building

Provincialism of Skill Base

With provincialization of the power sector, government sector efforts will have to be replicated with the benefit that the sector would become better at adapting to the local advantages. Therefore, the government needs to aggressively build the capacity at provincial and local level in order to ensure that power sector receives an improvement in governance. Examples of such efforts can include: mandating education from prestigious institutions, such as WAPDA Staff College, for staff of provincial power related bodies⁴. Such human capital accumulation can complement soft capital buildup.

¹ The caveats of the Energy (Gas, Oil, Coal and other Hydrocarbons) deserve their own separate discussion.

² With targets for capacity installation being borrowed from the Medium-Term Budgetary Framework

³ The policy recognized the introduction of 18th Amendment and gave provinces their due role in the power policy.

⁴ Examples of such bodies include Pakhtunkhwa Energy Development Organization (*PEDO*) and Punjab Power Development Board.

Buildup of Increasing Soft Capital

Potential measures for increasing soft capital of the government's power sector can include improving the Feasibility Studies for potential projects⁵. Other measures for building soft capital can include government ownership of SCADA data for power plants⁶. Such soft capital will allow the sector to flexibly adapt to changing domestic needs and foreign conditions without compromising the goals of the inclusive Integrated Energy Planning.

Inclusive

Strategic Policies, like NEP, are inclusive in terms of stakeholders and perspectives. The inclusion of stakeholders includes bureaucracy and provincial bodies. The legal and civil bureaucracy⁷ can help ensure the creation of a coherent policy that will alleviate legal and local friction in the implementation phase. Currently, legal troubles have been recognized as a source of project delays in projects that involved the laying of transmission generation lines by NTDC. Of course, stakeholders from other sectors such as finance and regulation can help identify a number of potential hurdles that can ironed out at the planning stage. The policy can also aim for perspective inclusiveness by accommodating generation, transmission, distribution, service provision, storage and trading within one single policy⁸. Including all these sub-sectors within the same policy reduces chances of the policy being inconsistent.

Cultivating Sector Development

The Development aspect of a visionary NEP would allow the sector to evolve with the demands of the global and local markets. In that aspect, the NEP can take a number of initiatives. For starters the policy can re-introduce the development for long term financing in the country. Both institutional and market-based financing⁹ can be considered for this role. Projects with long term tenors help make electricity more affordable by bringing down the debt component of the tariff.

Combine Bargaining Power

Long-term financing is just one of the many ways to reduce tariff in the long-run. Joint EPC contract negotiations can be another way. Currently, EPC negotiations happen individually for each company. This not only increases the cost of doing business¹⁰, but also reduces overall Pakistani negotiation power due to separate negotiations. A joint, government backed negotiation would help bolster the growth of industry via making the industry more transparent and through increasing the value addition to the economy per dollar of investment. This increased added value would help increase interest from the market in the long-run. Experience from such joint negotiations can be replicated towards joint negotiation of debt required for tenors.

Adapting to the changing transmission needs

Apart from investment in generation, transmission related measures should be addressed in NEP. Transmission sector in Pakistan plays a vital role in minimizing circular debt¹¹ and generation cost reduction¹². However, the transmission sector is expected to go through two major changes.

First, the central transmission body **NTDC**, is expected to be **replaced by provincial bodies**. For some provinces those bodies have already been created while for others, the process of creation has begun. NPP needs to ensure that the creation of these bodies does not come at the cost of the national grid. To ensure this synergy between the

⁵ This includes increased in breadth, through higher number of feasibility studies and more depth through collecting data on more

⁶ This data can be used for analysis as well as for training Machine Learning Program.

⁷ Provincial and Federal

⁸ The components of this holistic policy can always be modularized in order to avoid rigidity.

⁹ Bond and REIT based.

¹⁰ As each firm has to spend separate man hours negotiating items that can be negotiated jointly.

¹¹ By ensuring that generated electricity is evacuated into the national grid.

¹² By removing transmission constraints that will allow following the dispatch order (EPP based) to the letter.

provincial and national grids, NEP needs to provide for the creation of mechanism that would govern the trading and capacity of construction among the provinces.

Second, with the introduction of **transactive energy**, the national grid will have to master the construction of **mesh networks**. NEP needs to ensure that Pakistani government and private sector create the right legal, technological and financial base for the execution of such projects. Such a change in topology will happen concurrently with an increase in **transmission needs** for households due to **electrification of the transport sector**.

Third, due to the ever-increasing demand for transmission capacity, the government has to create the appropriate framework for the introduction of **private transmission line companies** in the country. Doing so would ensure the tight government coffers in the short-term don't spiral into medium term transmission constraints.

Finally, NEP needs to ensure appropriate national mechanisms that would allow the respective provinces, as well as the national grid, to **trade electricity at a regional level**. Currently Pakistan **imports** cheap electricity from Iran at a rate of 7.14 cents¹³. Moreover, there is potential for Pakistan to export power regionally. Such prospects **increase ROE** for the generation facilities while at the same time **increasing export revenue** for the country. Such transmission network can support the industrial revolutions of the future.

Manufacturing ability

Both government actions and private power policies in the past have completely ignored the **domestic manufacturing** aspect of power projects. This has meant that the industry's cost curves have not matured into a falling trend. Instead, they have stayed constant in dollar terms with a steep increase in rupee terms. The new NEP has to make adjustments for incentivizing sourcing of EPC components by either mandating minimum local content requirements¹⁴ or through allowing higher ROE¹⁵ ratios for projects with local content.

Developing National Skills

The future belongs to domestic generation of resources, be that in Hydel, Coal or Renewable Energy. Such technologies promise to reduce the dollar component of power production in Pakistan, which is always a sigh of relief for the Current Account Balance of the country. However, these promises will fall flat if the nation is forced to import the required skills to maintain and operate these facilities. Therefore, NEP must allow domestication of skills via bodies such as **Sector Skill Councils (SSCs)**. SSCs are more effective than traditional government programs due their **demand-oriented nature**.

This discussion will be continued in subsequent Newsletter encompassing: Preparation for the Fourth Industrial Revolution, Solving the "missing money" problem through Capacity Markets and learning from past mistakes.

¹³ Capacity utilization in summers hovers between 70-75%.

¹⁴ After securing relevant WTO exceptions.

¹⁵ Return on Equity

Our Members

Sr.#	Project	Primary Fuel	Alternate Fuel	Plant Location	Gross Capacity (MW)	Net Capacity at CoD (MW)
Prior to 1994 Power Policy						
1	The Hub Power Company Limited (Hub Plant)	RFO	-	Tehsil Hub, District Lasbela, Balochistan	1292	1200
Under 1994 Power Policy						
2	Lalpir Power Limited	RFO	-	Mehmood Kot, Muzaffargarh, Punjab	362	350
3	Pakgen Power Limited	RFO	-	Mehmood Kot, Muzaffargarh, Punjab	365	350
4	Habibullah Coastal Power Co (Pvt.) Limited	GAS	HSD	Sheikh Manda Killi Almas Road, Quetta	140	126
5	Kohinoor Energy Limited	RFO	-	Raiwind-Manga Road; Near Lahore	131	126
6	TNB Liberty Power Limited	GAS	HSD	Daharki, Distt. Ghotki, Sindh	235	211
7	Rousch (Pakistan) Power Limited	GAS	HSD	Sidhnai Barrage, Abdul Hakeem, District Khanewal	450	395
8	Saba Power Company	RFO	-	Farouqabad, Shiekhupura, Punjab	134	125
9	Uch Power (Private) Limited	GAS	-	Dera Murad Jamali, District Nasirabad	586	551
Under 1995 Policy						
10	Laraib Energy Limited	Hydel	-	7.5 km Downstream Mangla Dam, AJ&K	84	84
Under 2002 Power Policy						
11	Attock Gen Limited	RFO	-	Rawalpindi, Punjab	165	156
12	Atlas Power Limited	RFO	-	Sheikhupura, Punjab	225	214
13	Engro Powergen Qadirpur Limited	GAS	HSD	Qadirpur, Sindh	227	217
14	Halmore Power Generation Co. Ltd	GAS	HSD	Bhikki District Sheikhupura- Punjab	225	209
15	Narowal Energy Limited	RFO	-	5-km from Luban Pulli, on Main Narowal-Muridke Road, District Narowal	225	214
16	Liberty Power Tech. Limited	RFO	-	Faisalabad (near M-3 Industrial Estate)	200	195
17	Nishat Power Limited	RFO	-	Near Lahore	200	195
18	Nishat Chunain Power Limited	RFO	-	Near Lahore	200	195.722
19	Orient Power Company (Pvt.) Limited	GAS	HSD	Balloki, District Kasur, Punjab	229	213
20	Sapphire Electric Company Limited	GAS	HSD	Muridke, District Sheikhupura, Punjab	225	212.107
21	Uch-II Power Project	GAS	-	Dera Murad Jamali, Balochistan	404	381

Established in 2010, IPPA serves as an advisory body for Independent Power Producers (IPPs) in Pakistan. IPPA liaises with the government and related departments such as NEPRA, SECP, WAPDA, CPPA-G, NTDC and PPIB and also serves as a facilitator between various IPPs and stakeholders within the power sector.

If you have any suggestions or feedback, kindly write to us at feedback@ippa.com.pk