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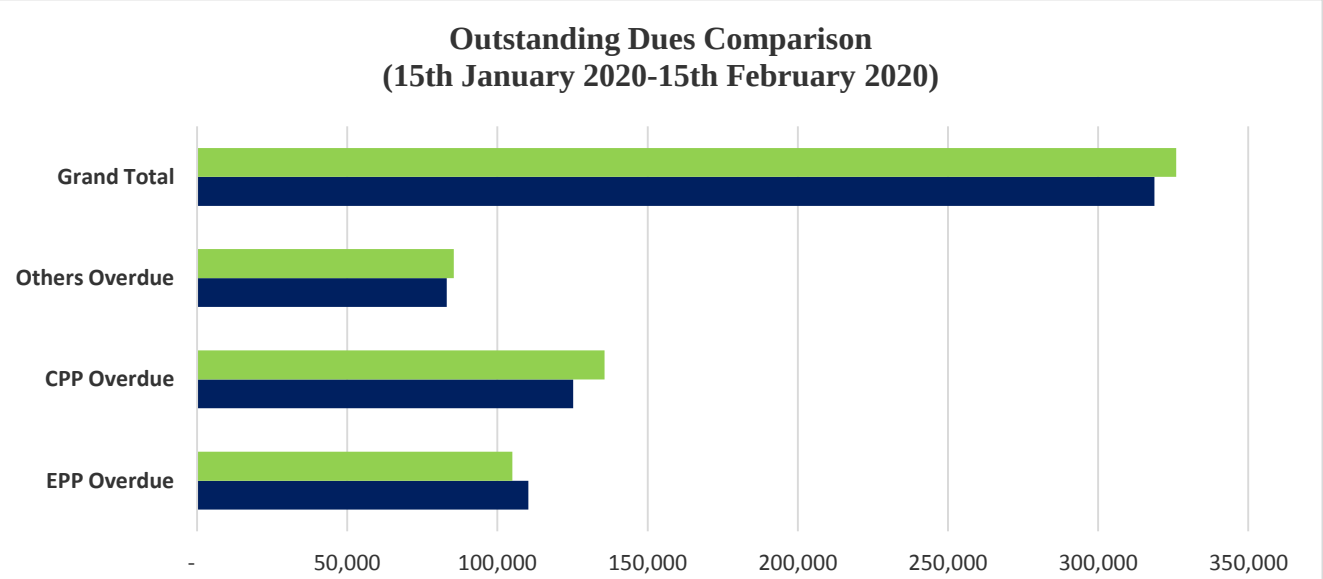
INDEPENDENT POWER PRODUCERS ASSOCIATION

MONTHLY NEWSLETTER

Welcome to the thirty-sixth 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 February, 2020 in PKR Millions

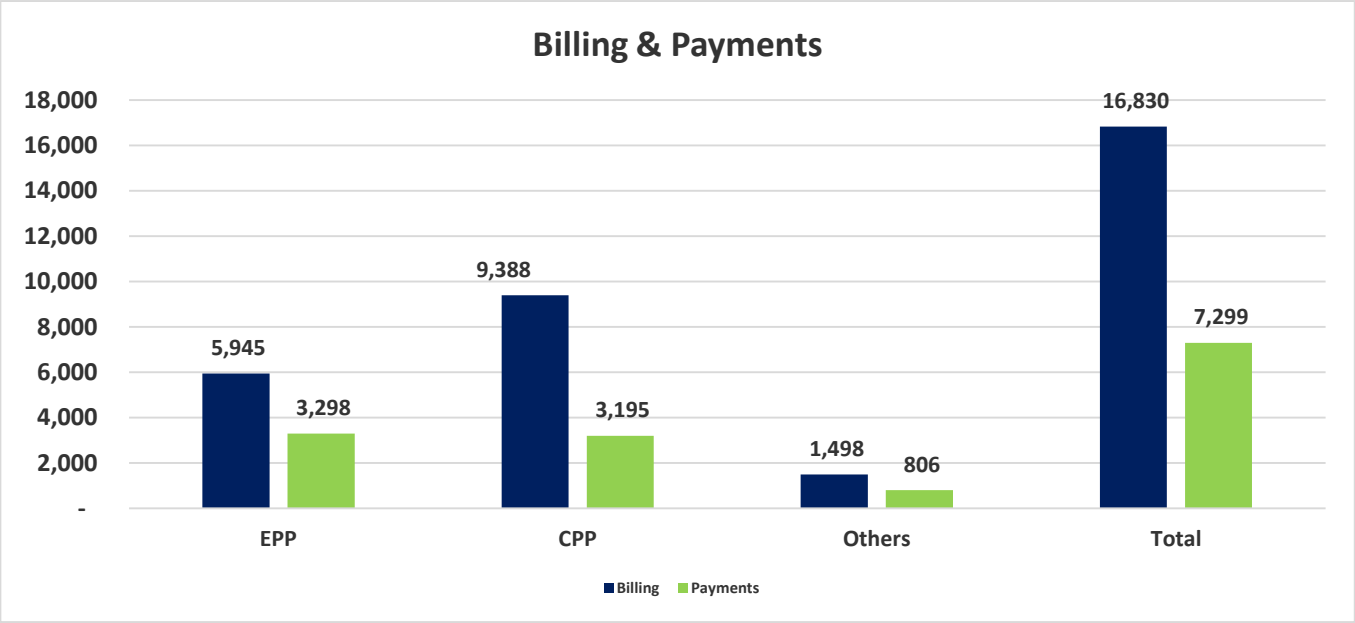


	EPP Overdue	CPP Overdue	Others Overdue	Grand Total
February	104,952	135,626	85,441	326,019
January	110,352	125,208	83,122	318,682

Source: Member and Subsidiary IPPs

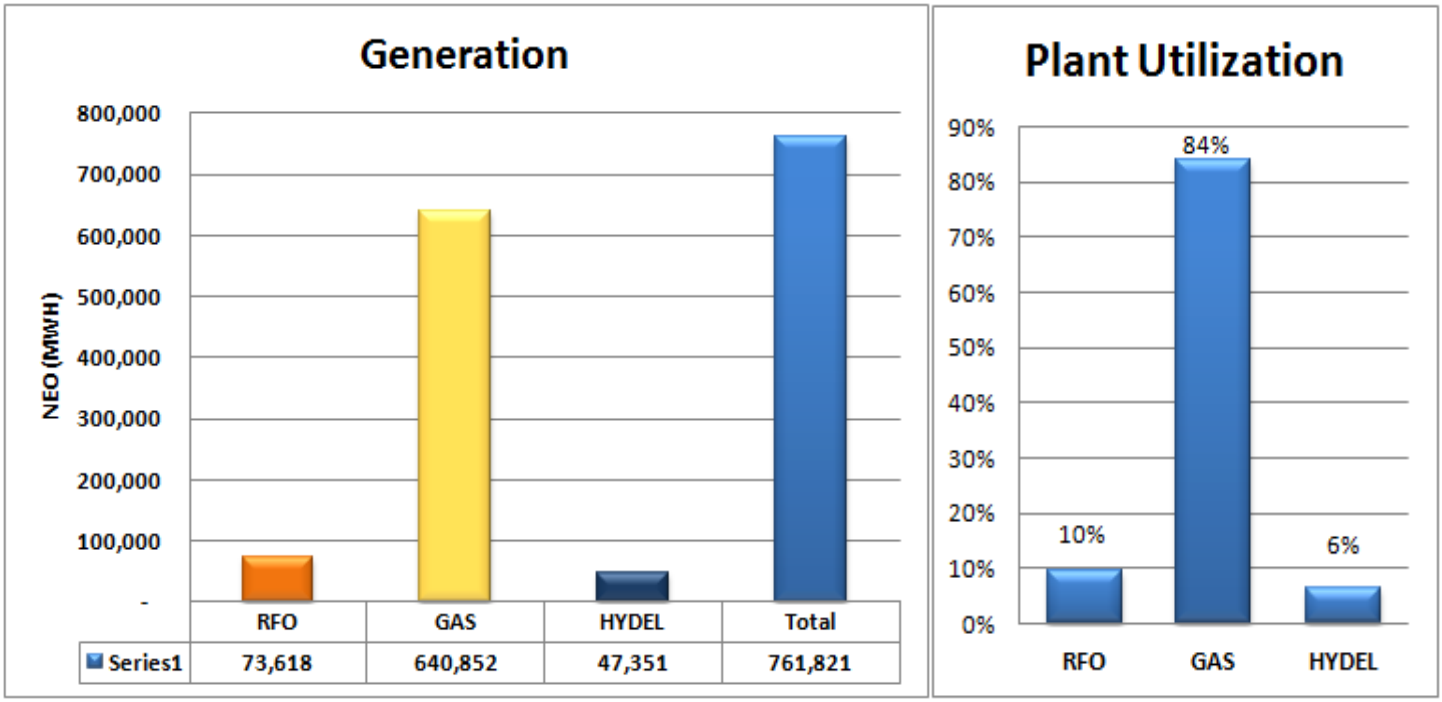
Monthly Infographics

Billing and Payments in February 2020 in PKR Millions



Source: Member and Subsidiary IPPs

Net Generation and Plant Utilization in February, 2020



Source: Member and Subsidiary IPPs

Power sector payables rise to Rs1.88tr, Pepco informs Senate

Dawn News/04-03-2020

ISLAMABAD: The Pakistan Electric Power Company (Pepco) — a defunct holding company of the Power Division — has reported total payables by sector power companies at Rs1.882 trillion as of Jan 31. In a report submitted to a Special Committee of the Senate, Pepco reported total receivables of the power sector at Rs1.178tr. That would mean that even if all the receivables of the power companies were recovered, there would still be gap of Rs704bn to be funded by the government through borrowing or increase in consumer tariffs. The report said the public sector payables to the Independent Power Producers amounted to more than Rs696 billion by the end of January. Surprisingly, the government-run power companies have also been holding back payments to the Water and Power Development Authority (Wapda). The payables to Wapda amounted to about Rs222bn by end-January. Payables against oil suppliers and gas suppliers amounted to Rs75.2bn and Rs82.27bn respectively while circular debt parked against the Power Holding Private Ltd — another holding company of the Power Division — increased to Rs807bn. Strangely though, the Pakistan State Oil (PSO) alone has reported total receivables of more than Rs357bn, including Rs140bn from public sector generation companies as of Feb 20.

The PSO's total receivables from the power sector amounted to Rs206bn, Another Rs151bn are payable by other entities including Rs94bn by the Sui Northern Gas Pipelines Limited on account of Liquefied Natural Gas non-payments and Rs57bn payable by the Pakistan International Airlines and the Ministry of Finance. Of the total Rs1.178tr receivables of the power companies, the outstanding amounts against the public sector entities and K-Electric amounted to Rs670bn. This included Rs17bn against federal government, Rs127bn against AJK government, Rs283bn against agriculture tube wells in Balochistan, Rs137bn against K-Electric, and Rs38bn against FATA and about Rs62bn against provincial governments. Strangely, the outstanding dues against private consumers stood at Rs509bn by end of January this year even though the distribution companies usually disconnect electricity connection for non-payment of electricity bills within 30 days. Pepco report explained the circular debt was emerging mainly due to non-availability of required funds to pay off the liabilities of power producers because of shortage of cash flow. It blamed almost all the public sector entities for the buildup of circular debt.

Mutual funds body interested in buying Rs200b Sukuk

The Express Tribune/04-03-2020

ISLAMABAD: The Mutual Funds Association of Pakistan (Mufap) has raised objections over government's move to raise Rs200 billion from a consortium of Islamic banks only to reduce circular debt in the energy sector, and wants to participate in the process. An official of the finance ministry told a sub-committee of the Public Accounts Committee (PAC) that the central bank had started the process of borrowing Rs200 billion but Mufap also desired to participate in the bidding. Therefore, the State Bank of Pakistan (SBP) refrained from opening the bids for floating Sukuk at the last minute on Friday. Mufap had expressed reservations about the participation of only a consortium of Islamic banks and sought to take part in the bidding for Rs200 billion worth of Sukuk to slash circular debt in the energy sector.

290 mini hydel power stations completed in KP

Business Recorder/05-03-2020

PESHAWAR: The Khyber Pakhtunkhwa government has completed construction of 290 Mini Hydel Power Stations (MHPSs) while 66 more mini-power stations will be completed in June this year. This was told in a meeting held here to review the overall performance of Energy and Power Department with Chief Minister Mahmood Khan in the chair. The chief minister was given detailed briefing on the performance of the department with special focus on KP Oil & Gas Company Limited (KPOGCL) and Pakhtunkhwa Energy Development Organization (PEDO). Provincial minister for Finance, Taimur Saleem Jhagra, Advisor to Chief Minister on Energy & Power, Himayatullah Khan, Head of Strategic Support Unit, Sahibzada Saeed, Principal Secretary to Chief Minister, Secretary Energy & Power and other relevant high ups attended the meeting. The meeting was also briefed about the progress so far made on the under completion major

power projects including Drar Khuar, Machai, Renola, Jabori, Matiltan, Koto and Lawi etc. The meeting was told that the completed power stations have been handed over to the local communities to ensure the provision of uninterrupted power to the local population at affordable rates. In the second phase of the initiative, sites have been identified for the construction of 672 similar power stations and work on the same will be started in the next financial year.

PM orders 'emergency' measures to address energy, petroleum woes

Pakistan Today/06-03-2020

ISLAMABAD: Prime Minister Imran Khan on Thursday ordered to devise an emergency programme to address the energy and petroleum sectors' challenges and to ensure that the reformation process puts minimum burden on the common man. "The common man would not be made to bear the brunt of an inefficient and corrupt system, which has been enforced for years," he remarked while presiding over a meeting to review the measures being taken to improve the efficiency of state-owned institutions. Energy Minister Umar Ayub Khan, Planning Minister Asad Umar, Privatization Minister Muhammad Mian Soomro, Aviation Minister Ghulam Sarwar Khan, Adviser on Finance Dr, Abdul Hafeez Sheikh, Adviser on Commerce Abdul Razak Dawood, Special Assistant to Prime Minister on Information and Broadcasting Dr Firdous Ashiq Awan and SAPM on Petroleum Nadeem Babar attended the meeting. The meeting was apprised of the administrative reforms in the auxiliary institutions of the ministries of petroleum and energy during the last 18 months, rise in revenue, and the measures taken to improve the overall performance of these institutions.

The participants were also briefed about the problems, faced by the ministries of petroleum and energy as well as the proposals currently under consideration to address those issues. The prime minister said the present government, since taking over, was taking measures to tackle the challenges faced by the energy sector on an emergency basis. He said the present government, despite inheriting the grave administrative and financial challenges in the energy sector, had been striving from the very first day to save the masses from the burden of those problems. The prime minister called for emergency measures to address the challenges of energy sector also stressed the need to run a public awareness campaign so that not only the people could be taken into confidence about measures being taken by the government to address the energy issues but also bring the elements involved in power and gas thefts to justice.

As Thar power plants come online, Engro's profits soar

Pakistan Today/09-03-2020

ISLAMABAD: There are no two ways about it: Engro had a great year in 2019. Revenue was up 32%, which is no mean feat for one of Pakistan's largest conglomerates, and profits were up 30%. While the company has eight active business lines, it was abundantly clear that the star for this year was the energy subsidiary, driven by massive increases in both revenue and profitability as the coal-fired power plants in Thar came online. Consolidated revenue grew by 32%, from Rs171.6 billion to Rs225.9 billion over the course of 2019. The single biggest component of that increase was Engro Energy, where revenue grew from Rs12.0 billion in 2018 to Rs50.0 billion in 2019, an over 4-times increase. The next biggest increase came in the food / rice export business, which grew by 22%. Every other business line grew either in single digits or else below inflation levels. In the energy sector, Engro's big stars were its energy investments in Sindh, both its coal mining operations as well as its coal-fired power generation units. The Sindh Engro Coal Mining Company (SECMC) – a joint venture with the government of Sindh – is scheduled to be able to produce 3.8 million tons of coal per year within its first year. Engro Powergen Thar Ltd operates a 660-megawatt coal-fired mine-mouth power generation unit in Thar.

Both projects achieved commercial operations on July 10, 2019. In 2019, the company was able to produce 2.3 million tons of coal from its mine. The company is also beginning work on Phase 2 of SECMC, where it would set up another coal mining operation that would allow it to mine up to 7.5 million ton of coal per year. In a sign of how perverse perceptions of energy security are in Pakistan, the company believes that being the entity that managed to utilise coal-fired power plants in Pakistan will have a positive effect on its public image. However, while the revenue and profit numbers look good for the energy business, entering

headlong into the energy business has resulted in Engro having significantly more exposure to a problem it has previously not had direct experience with: intercorporate circular debt throughout the energy supply chain caused by unpaid bills and stolen electricity and gas. What this means is that while the company is able to recognize revenue and accounting profit, its cash flow situation is actually worse than before. Because while it may own both the mine and the power generation plants, it still has to sell its electricity to state-owned utility companies, which do not have enough money to pay Engro, since they are not able to collect the full cost of energy production owing to rampant theft and inefficiencies in the electricity grid.

Power generation: Furnace Oil returns

Business Recorder/10-03-2020

Power demand is clearly struggling to pick up. January 2020 was the third month running, where year-on-year generation went down, although slightly. This is with a caveat – as December 2019 generation numbers never went public for some reason best known to the regulator. January 2020 net power generation ex-KE at 7.7 billion units is same as January 2019. Inexplicably, the transmission losses shoot up to 5.7 percent, which is more than double the 4-year average of 2.5 percent. Even accounting for lower hydel contribution in January, the number is on a very high side, as hydel generation share was still better than 4-year January average of 8 percent. Could it possibly be due to higher share of coal-based generation? Whatever the reason, the system would do well to not lose these units before they even make it to the grid. The story has been rather well documented as Pakistan has tried to make a gradual shift towards alternative fuels, from being heavily dependent on furnace oil in the past. But if the reader is wondering why all of a sudden, the oil refineries were not sending all those print advertisements pleading to be saved from closure – look at the generation numbers. There is apparently a ban of sorts on FO based generation, which the Minister was boasting of when November numbers came out.

Furnace oil can make a surprise visit whenever it wants – and two (or three) months of absence is all what it took for FO to make a comeback with 0.8 billion power units. The 10 percent share in generation became 20 percent - that in the total fuel bill is at Rs11 billion. The average fuel cost on FO based generation at Rs13.77 per unit is almost double the average generation cost without FO. Coal plants are running at full throttle and constituted one-third of the total power generation in January 2020. At 2.5 billion units, this was coal's biggest monthly contribution, both in terms of share and absolute generation. At Rs5.9 per unit, the fuel cost is also significantly lower than FO and LNG. Saving the refineries meant LNG plants were not required to generate anywhere near full capacity. From the highs of 3.6 billion monthly units, to under a billion, has meant that the take-or-pay agreements are well and truly in play, leading to billions being paid in capacity payments, for power that was never made. If the oil prices are to remain anywhere close to the new lows of $30-40/bbl, a small hello to FO based generation may not look bad on the fuel bill. But for now, the focus should be to have the grid demand increase, so to make full use of the plants on disposal. It would hurt much less paying for capacity, where actual power is being pumped.

No more increase in gas, electricity tariffs: PM

Dawn News/10-03-2020

GHALANAI/PESHAWAR: Prime Minister Imran Khan on Monday said his government would no more increase gas and electricity rates as inflation had been contained and prices of essential commodities started coming down. Addressing a public gathering after distributing Kafalat cards among deserving people under the anti-poverty Ehsaas programme, he said: "I have decided not to increase the power tariff anymore because the people can no longer afford. I have decided to take all possible measures to bring down the power tariff in any way." The prime minister said the prices had surged in the past due to the contracts signed by the previous government agreeing to the purchase of power and gas at exorbitant prices. He said that due to the 15-year gas contract signed by the previous government, Pakistan was getting gas supply at higher rates in the world. Imran says prices surged due to contracts signed by previous government. He said his government would talk to the power producers and urge them to bring down electricity prices and close down those plants, which were producing costly power as no more burdens could be passed on to the people and industries.

Siemens completes its first solar project in Pakistan

Energy Update/11-03-2020

THATTHA: Siemens completed the grid connection for Gharo Solar Ltd.'s 50-megawatt solar plant in the Thatta district in Pakistan's Sindh Province through a 132-kilovolt (kV) grid station. Clean energy from the plant will feed into K-Electric's power grid. This was the first contract that Siemens has completed for a solar power plant in Pakistan. The grid station is equipped with digital technology that enhances controllability and reliability, while optimizing operating costs. Siemens supplied substation automation system as well as protection and control equipment. As part of the project, the company provided a ring main unit (RMU) for the 22-kV distribution network which will help protect, for example, inverter transformers connected to the grid against overloads and short-circuits, ensuring a reliable power supply. Overall, the project is needed to supply power for ongoing infrastructure development, projects, schools, hospitals, and industries in and around Karachi, Pakistan's biggest city. The project will help K-Electric bridge the shortfall in its power network that serves 15 million people in Karachi.

Five export-oriented sectors: ECC approves electricity relief package

Business Recorder/12-03-2020

ISLAMABAD: The Economic Coordination Committee (ECC) of the Cabinet approved a special relief package to further continue the provision of subsidized electricity at 7.5 US cents per Kwh till end June 2020 to five export-oriented sectors, namely textile, carpets, leather, sports and surgical goods. The Finance Division (FD) issued two statements at the conclusion of the ECC meeting, which was chaired by Adviser to the Prime Minister on Finance and Revenue Dr. Abdul Hafeez Shaikh here on Wednesday. Soon after the meeting, the FD issued an official statement, saying that the ECC approved a proposal by the Power Division for a special relief package of Rs20 billion to further continue provision of subsidized electricity until June 2020 to five export-oriented sectors. However, later a revised statement was issued where the amount of Rs20 billion was not mentioned and stated as, "ECC approved a proposal by Power Division for a special relief package to further continue provision of subsidized electricity until June 2020 to five export-oriented sectors". According to the Power Division summary submitted to the ECC of the Cabinet, Finance Division will budget Rs28 billion as subsidy for fiscal year 2019-2020 to be paid to the Power Division in the first week of July 2020 out of the budget of fiscal year 2020-2021.

Pakistan Refinery warns of plant closure

The Express Tribune/12-03-2020

ISLAMABAD: Pakistan Refinery Limited (PRL) has warned the government of possible closure following refusal of oil marketing companies (OMCs) – which are giving preference to imports – to lift the locally produced petroleum products. PRL management warned that the refinery was surviving on an hour-to-hour basis and it may not only lead to the closure of refinery but it was also going to face a major hit due to inventory losses in the wake of OMCs' reluctance to lift high-speed diesel and petrol. Other OMCs were also hesitant to lift petroleum products from the refineries. Officials said PSO and some other OMCs imported 320,978 tons of high-speed diesel and 576,113 tons of petrol in February 2020. PRL had declared the availability of 40,000 tons of high-speed diesel in the last month and only 28,600 tons were lifted, causing inventory losses to the refinery. PRL, in a letter sent to the petroleum secretary, said the Oil Companies Advisory Committee (OCAC) held a meeting on March 3, 2020 to discuss the demand and supply situation of petroleum products. "We would like to bring to your notice the short-lifting of high-speed diesel and petrol which, owing to allege constraints, can lead to the possible closure of the refinery. In this regard, we request your urgent intervention," said the PRL management.

Share of coal in power mix reaches 32pc

Business Recorder/13-03-2020

LAHORE: Share of coal in power mix has reached 32 percent, as the coal-based power generation went up by 72 percent YoY during January 2020 and the coal-based generation was witnessed at 2,501 GWh during Jan '20, said sources. They said the induction of China Power Hub Generation and Engro Powergen Thar in the system was the primary reason behind this surge. The coal and hydel generation have replaced furnace oil and gas. It may be noted that the power generation remained 7,794GWh (10,475 MW) during January

2020, compared to 7,764 GWh (10,435 MW) during January 2019. Major contributors during Jan 20 remained coal, gas, hydel, furnace oil and nuclear. Hydel based power generation went up by 82 percent, followed by 72 percent YoY rise in coal-based generation. However, furnace oil (FO), nuclear, RLNG and gas-based generation went down by 54 percent YoY, 25 percent YoY, 16 percent YoY and 3 percent YoY, respectively. Power generation went up by 1.8 percent during 7MFY20, they added. Sources said the fuel cost for power generation went down by 18 percent YoY to PKR5.99/KWh on the back of higher generation on hydel and coal.

During 7MFY20, power generation went up by 1.8 percent YoY to settle at 74,261 GWh. Given higher generation on hydel and coal, fuel costs have shrunk by 8.5 percent YoY to an average at PKR4.99/KWh during 7MFY20. They said the fuel cost has come down by 18.1 percent YoY during Jan ’20 due to the reason that the coal-based generation cost has witnessed a decline of 12.4 percent YoY attributable to 6.3 percent YoY decline in the international coal prices. The furnace oil-based generation cost witnessed a decline of 1.1 percent YoY; while the FO-based generation also went down by 54 percent to 801 GWh. Furnace oil is a relatively expensive source of power generation compared with coal. The hydel-based (no fuel cost) power generation witnessed an increase of 82 percent YoY to 868 GWh. Bagasse-based cost of generation went down by 3.3 percent to PKR6.0/KWh. Wind-based power generation went up by 0.8 percent YoY to 158 GWh. Solar-based power generation also went up by 3.8 percent YoY to 45 GWh.

LESCO to install 1.7 million modern meters

The Express Tribune/16-03-2020

LAHORE: The Lahore Electric Supply Company (LESCO), in collaboration with the Asian Development Bank (ADB), will install 1.7 million meters based on the advanced metering infrastructure (AMI) to address billing complaints and power theft. The installation of the modern meters will cost $300 million. The move will help eliminate traditional meter reading and its cost, as well as line losses. Incidents of meters and transformers catching fire are also likely to be reduced, as the devices will keep relaying information to a central control room LESCO’s contract with a foreign company has been finalized for the technical and commercial evaluation of the AMI project. The consultancy contract has been signed for the installation of new AMI meters in place of old devices in the LESCO region. The consultancy firm will complete commercial and technical evaluation in three months, after which work on the project will start. The project will be completed in four years. Of the project cost, 78.5 percent will be met by the ADB, while LESCO will provide 21.5 percent of the funding through its sources. Under the project, 1.7 million AMI meters will be installed in LESCO’s south and central circles.

Attock Refinery closes one plant for lack of demand

The Express Tribune/14-03-2020

ISLAMABAD: After a warning by Pakistan Refinery Limited (PRL) of possible plant closure, Attock Refinery Limited (ARL) has become a victim of slack oil demand as the company has been forced to shut down one of its plants due to the reluctance of oil marketing companies (OMCs) to lift locally produced petroleum products. ARL operates on locally produced crude oil and its plant shutdown may lead to a gas crisis as it will reduce crude oil purchases from oil and gas exploration and production companies. The refinery management has also warned of a gas crisis if it is closed. Oil traders are making money through higher imports at the cost of local refineries that are set to face inventory losses due to a sharp decline in global crude oil prices following the eruption of a price war between Russia and Saudi Arabia. Earlier, the PRL management warned the Petroleum Division that the refinery was surviving on an hour-to-hour basis and the refusal of OMCs, which were not buying local petroleum products and depending on imported fuel, may lead to the closure of the plant. Attock Refinery reports loss of Rs2.67b in Oct-Dec 2018. It is interesting that as the country faces pressure on its foreign exchange reserves from time to time, oil importers always get dollars to pay for purchases.

220kV grid station energized at New Port Qasim

Business Recorder/17-03-2020

KARACHI: K-Electric’s Chief Generation & Transmission Officer, Dale Sinkler officially energized the new 220kV grid Station located in New Port Qasim

which is the 10th 220 kV grid station in K-Electric's (KE) fleet. This follows the recent construction and energization of the 220 kV Surjani & 132kV Gulshan grid stations under the USD 460 Million TP-1000 transmission enhancement Project. Reiterating the power utility's commitment to strengthening power supply for its customers, Dale said, "We are progressing swiftly with the TP-1000 project which on completion, would upgrade KE's transmission capacity through an additional 1,000 MVA. Thus far 940 MVA have already been added to our network and energizing this 220 kV New Port Qasim grid, located at the heart of a key industrial zone in Karachi, is in line with our vision of driving Pakistan's progress by powering Karachi's industrial and commercial prosperity. "This is another milestone in an on-going stream of investments of over USD2.4 billion undertaken by K-Electric since 2009 across the electricity value-chain.

660MW Lucky electric coal-fired plant: Rs750m foreign financing for evacuation of power to be arranged

Business Recorder/26-03-2020

KARACHI: The government will arrange Rs750 million foreign financing for "Evacuation of Power from 660 MW Lucky Electric Coal Fired Plant at Port Qasim" project. The project has been approved at the cost of Rs1.315 billion, in which Rs454 million would be financed through domestic resources, official documents of the project indicated. Apart from the foreign and domestic financing, Rs110.14 million worth of duty is also part of the total cost of the project. National Transmission & Despatch Company (NTDC) will finance the local component of the project through its own resources. The objective of project is interconnection of 660 MW Lucky Electric Coal Fired Power Plant near Power Qasim with the National Grid System for transfer of power to upcountry load centers by construction of 500 kV double circuit transmission line. According to the documents, the transmission system of the country is overloaded and not capable of coping with the increasing power demand. In near future thousands of megawatts addition in the system would result in frequent tripping and heavy breakdowns. Resultantly, enhancement in transmission and transformation capacity of NTDC system is required. As part of the sector strategy, the government wants to provide reliable, uninterrupted power to its consumers. Keeping in view the present overloaded system and increasing availability of additional power generation capacity in near future coupled with hefty power demand.

Oil and gas declared essential services amid lockdown

Dawn News/26-03-2020

ISLAMABAD: The government notified oil, gas and related operations as 'Essential Services" to avoid any disruption due to the prevailing lockdowns in some provinces. It also notified Rs15 per litre reduction in prices of petrol, diesel and kerosene in line with the announcement made by the prime minister but rejected calls by oil marketing companies and retailers for compensation against inventory losses. Petroleum Assistant Nadeem Babar said the operations of some sectors in the oil and gas, including LNG port handling, had come under pressure because of provincial lockdowns and special intervention had to be made to ease the situation. Separately, in a notification issued by the Petroleum Division said the supply of oil and gas and related operations were essential services to meet energy requirements of the country. Hence, the movement of all E&P companies operating in Pakistan, their subcontractors, personnel, equipment, and vehicles was essential to keep the services up and running. Therefore, it asked all the provincial governments and district administrations to allow, in the best national interest, unhindered movement of oil and gas companies.

Deferred payment of power bills: PD issues instructions to Discos

Business Recorder/27-03-2020

ISLAMABAD: Power Division on Thursday issued instructions to the power Distribution Companies (Discos) about Prime Minister relief package for deferred payment of electricity bills of domestic consumers using up to 300 units in a month due to COVID 19 pandemic. Accordingly, Power Division has issued the following instructions: (i) private domestic consumer (single phase) having consumption up to 300 units will be considered eligible for payment of bill in " three installments" ;(ii) total payable amount including arrears and previous installments (if any) will be considered for calculation of installments :(iii) Late Payment Surcharge (LPS) will not be levied in case of non-payment to such consumers;(iv) no mark-up will be charged on this deferred amount ;(v) domestic

consumers of Tesco and Hesco (Thar subsidy) will be excluded from this relief package (as their bills are paid by the GoP and GoS);(vi) consumer can pay total amount during current month if he/she wants and ;(vii) following message will be displayed on bill “PM Relief for COVID 19”.

Asad Umar replaces Hafeez Shaikh as head of cabinet’s energy committee

Energy Update/28-03-2020

ISLAMABAD: Minister for Planning and Development Asad Umar has been appointed as the new chairman of the Cabinet Committee on Energy, replacing the PM’s finance adviser Abdul Hafeez Shaikh, ARY News reported on Thursday. The federal government has reconstituted the Cabinet Committee on Energy over the directives of Prime Minister Imran Khan. Adviser to Prime Minister on Finance Abdul Hafeez Shaikh was removed from the top spot of the cabinet’s energy committee which is succeeded by the federal minister Asad Umar. The finance adviser Abdul Hafeez Shaikh will become a member of the committee. The newly constituted energy committee will be comprised of seven members under the chairmanship of Asad Umar. The members will include federal minister for railways, minister for power division, minister for maritime affairs, commerce adviser Abdul Razak Dawood and minister for petroleum.

International News

Wind energy enjoyed a bumper year in 2019, but the coronavirus poses a unique challenge

CNBC/25-03-2020

NEW YORK: Wind power may have enjoyed a strong year in 2019, but the coronavirus pandemic is casting a shadow over the sector that could impact growth in the years ahead. Almost more than 60 gigawatt (GW) of wind energy capacity got installed last year, a 19% increase compared to 2018, according to a new report from the Global Wind Energy Council (GWEC). Published Wednesday, the GWEC's report found that 60.4 GW of capacity was installed in 2019, the second biggest year for additions. Total capacity now stands at more than 651 GW. The GWEC said China, the U.S., U.K., India, and Spain accounted for 70% of new capacity in 2019. In the onshore sector, China and the U.S. continued to be the world's leading markets, responsible for over 60% of new capacity last year. Elsewhere, the offshore wind sector installed 6.1 GW of capacity in 2019, its best year to date. While the figures for 2019 are a positive for the sector, the coronavirus pandemic could have a significant impact on things going forward. Dan Shreve, Wood Mackenzie's head of global wind energy research, wrote that the coronavirus would see global wind additions for 2020 drop by 4.9 GW compared to previous projections. "The state of the pandemic is evolving on an hourly basis, resulting in a highly reactionary environment," Shreve said. "Industry stakeholders are continually adapting business operations to balance worker safety with the needs of their clients, all while complying with dynamic government containment measures," he added. For its part, the GWEC said its forecast of continued growth across the next five years – more than 355 GW of additions – would "undoubtedly be impacted by the ongoing COVID-19 pandemic, due to disruptions to global supply chains and project execution in 2020." It was, however, "too soon to predict the extent" of the coronavirus' impact on both energy markets and the wider global economy, the GWEC added.

Oil markets slump amid coronavirus chaos

CNBC/22-03-2020

NEW YORK: Oil prices fell on Monday as government's escalated lockdowns to curb the spread of the global coronavirus outbreak that has slashed the demand outlook for oil and threatened a global economic contraction. The Brent crude futures fell $1.09, or 4%, to $25.89 a barrel by 0209 GMT. West Texas Intermediate (WTI) crude futures were down 15 cents, or 0.7%, at $22.48 a barrel. The oil prices have fallen for four straight weeks and have given up about 60% since the start of the year. Prices of everything from coal to copper have also been hit by the crisis, while markets in bonds and stocks enter rarely charted territory. The coronavirus, which has infected more than 325,000 and killed over 14,000 worldwide, has disrupted business, travel, and daily life. "We believe oil prices will continue to fall into the teens in the short term amid disaster demand destruction, building global stocks and no production limits after April 1," said Joseph McMonigle, senior energy policy analyst at Hedgeye Potomac Research, in a note. Demand is expected to fall by more than 10 million barrels per day (bpd), or about 10% of daily global crude consumption, said Giovanni Serio, head of research at Vitol, the world's biggest oil trader. Goldman Sachs estimated demand loss could total 8 million bpd, brought about by countries slowing economic activity to combat the coronavirus outbreak. Oil refiners worldwide are slashing production or considering cuts as the pandemic causes the evaporation of fuel demand.

India has some huge renewable energy goals. But can they be achieved?

CNBC/03-03-2020

OHIO: One of the largest countries on the planet by area, India is home to more than a billion people, a vast economy, and a huge military. The country's energy needs are similarly large scale: India's primary energy consumption hit 809.2 million tons of oil equivalent in 2018, according to BP's Statistical Review of World Energy. On this metric, the country is behind only China and the U.S. When it comes to renewables, India has set itself some ambitious targets. Prime Minister Narendra Modi's government is targeting 175 gigawatts (GW) of renewable capacity by the year 2022 — a goal

proudly displayed on the Ministry of New and Renewable Energy's website — and is aiming for 450 GW by 2030. Capacity refers to the maximum amount that installations can produce, not what they are currently generating. To put all of the above in perspective, India's installed capacity — for all energy sources — was a little less than 369 GW at the end of January 2020, according to government figures. Breaking the numbers down, renewables — listed as small hydro, wind, solar and bio-power — accounted for over 86.3 GW of this total. India's longer-term renewables target of 450 GW represents a big challenge that will dramatically alter the country's energy landscape. It can be viewed through the prism of the "global energy transition," which refers to a move away from fossil fuels and toward renewable sources of energy. The impact of this shift could be significant: research and consultancy group Wood Mackenzie has previously said that "close to 20% of global power needs will be met by solar or wind" by the year 2035. "The Government of India has set a very ambitious 2030 target of 450 GW of renewable energy … or 520 GW including large scale hydro," the IEEFA's Buckley explained. "IEEFA views this as aggressive but achievable, subject to the government delivering policy stability, transparency and consistency," Buckley added.

World's wind power capacity up by fifth after record year

The Guardian/25-03-2020

LONDON: The world's wind power capacity grew by almost a fifth in 2019 after a year of record growth for offshore wind farms and a boom in onshore projects in the US and China. The Global Wind Energy Council found that wind power capacity grew by 60.4 gigawatt, or 19%, compared with 2018, in one of the strongest years on record for the global wind power industry. The growth was powered by a record year for offshore wind, which grew by 6.1GW to make up a tenth of new wind farm installations for the first time. The council's annual report found that the US and China remain the world's largest markets for onshore wind power development. Together the two countries make up almost two-thirds of global growth in wind power. GWEC had expected 2020 to emerge as a record year for the rollout of wind energy projects, and forecast growth of 20% in the year ahead, but it said the impact of the global coronavirus pandemic was as yet unknown. The virus outbreak could slow construction of energy projects in line with an economy-wide slowdown in manufacturing and infrastructure development, but the council believes Covid-19 could still present an opportunity for the wind industry. Ben Backwell, the chief executive of GWEC, said global clean energy growth is not where it needs to be to help keep global temperatures in check as part of the Paris climate accord. "If we are to have any chance at reaching our Paris agreement objectives and remaining on a 1.5C pathway, we need to be installing at least 100GW of wind energy per year, and this needs to rise to 200GW per year and beyond," he said.

Energy storage boom stalls in Europe

The Guardian/23-03-2020

LONDON: Europe's energy storage boom stalled last year due to a slowdown in large-scale schemes designed to store clean electricity from major renewable energy projects, according to the European Association for Storage of Energy (Ease). A new study by consultants Delta-EE for Ease found that the European market grew by a total of 1 gigawatt-hours in 2019, a significant slowdown compared with 2018, when the energy storage market exceeded expectations to grow by 1.47GWh. The slowdown in 2019 has emerged amid rising concern that the outbreak of the coronavirus may stall the rollout of clean energy technologies in 2020, dealing a double blow to the clean energy industry. The 2019 downturn was particularly marked for large-scale energy storage projects which connect directly to energy grids, and can help make better use of renewable energy by storing the clean electricity to use when wind and solar power is not available. These large, utility-scale projects often require planning permission, government financial support, or procurement tenders to move ahead. Meanwhile, the rollout of home battery kits, which relies far less on policy support, remained a fast-growing market. Patrick Clerens, the Ease secretary general, said: "The message is clear: even if energy storage is a key enabler of the energy transition and clearly seen as a major tool to achieve the emissions targets linked to the Paris agreement, more support is needed." The report expects the EU's clean energy package, which has legislated support for clean energy technologies, to be key to creating a framework for investing in energy storage. Clerens said the package

was “an important step” which should allow energy storage “to reach its full potential fast”.

South Africa tweaks rules for small-scale power producers

Reuters/27-03-2020

JOHANNESBURG: South Africa has eased regulations governing small-scale power producers as part of efforts to tackle the country’s energy problems, but industry experts said the changes did not go far enough. Companies of all sizes have been clamoring for government to reduce red tape preventing them from building their own generating facilities, since state utility Eskom has had to implement frequent nationwide power cuts and has raised tariffs steeply over the past decade. The country’s mining industry alone says it could bring up to 1,500 MW of capacity online in the next few years with the right regulations in place. Energy minister Gwede Mantashe on Thursday tweaked regulations for generators with a capacity of less than 1 megawatt (MW), effectively exempting them from the need to obtain a licence from the regulator, but the exemption did not include larger generating facilities. Mantashe’s ministry said on Friday the changes meant “regulatory hurdles previously experienced have been addressed” and cited comments by President Cyril Ramaphosa that the government wanted to “significantly change the trajectory of energy generation in our country”. But energy experts said Mantashe’s amendment was a missed opportunity. They had hoped facilities with a capacity of up to 10 MW would be exempt from the need for a licence, which can be difficult to obtain and relatively few have been issued. “It is extremely disappointing and not in line with the statements the minister and the president made publicly. There is effectively no change,” energy expert Chris Yelland said of Mantashe’s amendment. In a 2017 amendment, a former energy minister had exempted generators under 1 MW from the need to obtain a license under a different set of circumstances.

California sets goal to double clean energy by 2030

Reuters/27-03-2020

CALIFORNIA: The state day adopted a new emissions target for its electric sector that would double the state’s clean energy capacity over the next decade and close the door to development of new natural gas plants, but green groups said the goal was not aggressive enough. The state’s Public Utilities Commission set a target of reducing greenhouse gas emissions to 46 million metric tons by 2030, 56% below 1990 levels. The goal outpaces the state’s overall goal of slashing emissions to 40% below 1990 levels by 2030. California electricity providers will need to develop nearly 25 gigawatts of renewable energy and battery storage to achieve the goal, nearly double the amount the state has currently, CPUC Commissioner Liane Randolph said in a statement. The agency anticipates 8,900 MW of energy storage will be included in that total, or about eight times more than existed in the entire United States at the end of 2018. Environmental groups had pressed for a more aggressive target of 30 MMT that would get the state closer to its 2045 goal of sourcing electricity exclusively from carbon-free sources. “We must go beyond business as usual, and act with the urgency that is necessary to adequately tackle the climate crisis,” Sierra Club Campaign Representative Luis Amezcua said in a statement. Utilities and power plant owners including Calpine Corp, Pacific Gas & Electric, and San Diego Gas & Electric favored the 46 MMT target. In a compromise, the PUC directed utilities to submit plans for meeting a backup goal of 38 MMT. Once it receives those plans, the agency will decide whether it favors the deeper target. New gas plants are allowed if they use bio methane, which comes from manure, landfills or wastewater and is interchangeable with gas drilled out of the ground. It cuts greenhouse gas emissions by ensuring significant volumes of methane, that would have been produced anyway, never reach the atmosphere.

Global coal plant development fell for fourth year running in 2019: research

Reuters/26-03-2020

LONDON: Global coal power plant development declined for the fourth year running in 2019, while a total of 13 gigawatt (GW) of capacity construction has been delayed so far this year due to the coronavirus, research by environmental organizations shows. The annual survey of the global coal plant pipeline by Global Energy Monitor, Greenpeace International, the Sierra Club and the Centre for Research on Energy and Clean Air showed a 16% drop last year in capacity under construction and development. This year, 15 plants with a total capacity of 13 GW have so far been

delayed by workforce or supply chain issues related to the coronavirus outbreak. However, China's approval of permits for coal plants has increased in an effort to stimulate its economy. From March 1 to 18 this year, China approved more coal-fired capacity for construction (6.6 GW) than during all of 2019 (6.3 GW). Even with the overall fall in coal plant development in 2019, the world is not on track for the steep reductions in coal power necessary to meet goals to limit global warming, the report said. Scientists have said coal use needs to fall 80% by 2030 to keep global warming below 1.5 degrees Celsius. New coal plant developers face increasingly difficult conditions as restriction on investment have come from banks and insurers, as well as government commitments to phase out coal.

U.S. wind, solar industries plead for tax credit 'tweaks' to keep projects alive during virus outbreak

Reuters/26-03-2020

NEW YORK: Wind and solar companies, facing project delays that threaten their ability to tap lucrative green energy subsidies, are pleading with lawmakers for help after not being included in the $2 trillion U.S. coronavirus stimulus package. Renewable energy groups including the Solar Energy Industries Association and the American Wind Energy Association spent the last week warning that business disruptions related to the coronavirus pandemic could result in the loss of 160,000 jobs if Congress does not extend deadlines here for projects to qualify for sun setting federal tax credits. Those requests were not included in the $2 trillion coronavirus aid package expected to be approved by the Senate on Wednesday, after Majority Leader Mitch McConnell lumped the industry's asks into a list of "unrelated demands" by Democrats that he said were slowing down the legislation. Green energy companies are hopeful their requests will be included in a subsequent bill that is expected to aid specific sectors, according to Greg Wetstone, president of the industry trade group American Council on Renewable Energy. "We do not need a bailout," said Sheldon Kimber, chief executive of solar developer Intersect Power, which has five projects beginning construction in California and Texas this year. Kimber said the industry needs "a handful of definitive tweaks to the tax credits we already get." The sector is already experiencing labor stoppages in states like California that are under stay at home orders to help slow spread of the virus. And shipments of supplies of solar panels and other components have been disrupted due to coronavirus lockdown orders in Asia and Europe. "If that ability to monetize the tax credit goes away, you have gigawatt and gigawatt of projects that were supposed to be built over the next two to three years that are very much in jeopardy," Goldstein said.

Nearly $640 billion coal investments undercut by cheap renewables: research

Reuters/12-03-2020

LONDON: Nearly $640 billion of investment in coal power capacity worldwide is at risk because it is cheaper to generate electricity from new renewables, research by think tank Carbon Tracker Initiative showed. Institutional investors are increasingly withdrawing from fossil fuel companies due to the risk their assets will become stranded as tougher emissions-cuts targets discourage their use and renewable energy becomes even cheaper. The report examined the economics of 95% of coal plants, which are operating, under construction or planned worldwide. Globally, 499 gigawatt (GW) of new coal power capacity is planned or under construction with an investment cost of $638 billion. According to the analysis, almost 60% of global coal power plants are generating electricity at a higher cost compared with building new renewables. By 2030 at the latest, it will be cheaper to build new wind or solar capacity than continue operating coal in all markets, the report said. The capital recovery period for new investments in coal capacity is usually 15 to 20 years, making these investments risky.

"Renewables are out-competing coal around the world and proposed coal investments risk becoming stranded assets which could lock in high-cost coal power for decades," said Matt Gray, co-author of the report and co-head of power and utilities at Carbon Tracker. EU investment of $16 billion is at risk on 7.6 GW of new coal capacity planned. In China, the world's biggest coal producer, $158 billion of investment is at risk, with 100 GW of coal capacity under construction and 106 GW planned. China has 982 GW of existing coal power, and 71% of this costs more to run than building new renewables. In India, $80 billion is at risk, with 37 GW of coal power under construction and 29 GW planned. Out of a total 222 GW of existing coal

capacity, 51% costs more than new renewables. The United States has 254 GW of coal capacity, with 47% costing more than new renewables. The report said market forces would drive coal power out of existence in deregulated markets, where renewable energy developers will take advantage of the growing price gap. However, several governments continue to incentivize new coal capacity, allow the high cost of coal to be passed onto consumers, or subsidize coal operators.

Wind and solar plants will soon be cheaper than coal in all big markets around world, analysis finds

The Guardian/12-03-2020

LONDON: Building new wind and solar plants will soon be cheaper in every major market across the globe than running existing coal-fired power stations, according to a new report that raises fresh doubt about the medium-term viability of Australia's $26bn thermal coal export industry. While some countries are moving faster than others, the analysis by the Carbon Tracker Initiative, a climate finance think-tank, found renewable power was a cheaper option than building new coal plants in all large markets including Australia, and was expected to cost less than electricity from existing coal plants by 2030 at the latest. Solar photovoltaic and wind energy were already cheaper than electricity from about 60% of coal stations, including about 70% of China's coal fleet and half of Australia's plants, it said. But the group found that coal power would struggle if markets were priced fairly. It called on governments to block new coal projects and phase our existing coal plants, in part by changing regulations to allow renewable energy to compete on a level playing field.

Carbon Tracker's Matt Gray, a co-author of the report, said proposed coal investments risked becoming stranded assets that locked in increasingly expensive power for decades. The analysis found that developers risked wasting more than $600bn if all mooted coal-fired plants were built.

"The market is driving the low-carbon energy transition but governments aren't listening," Gray said. "It makes economic sense for governments to cancel new coal projects immediately and progressively phase out existing plants." A more detailed analysis by several think tanks found that coal-fired electricity fell about 3% in 2019, the biggest drop on record after more than four decades of near-uninterrupted growth in which coal power has been a primary driver of the climate crisis. China's use of coal plants continued to climb while generation in the US and Europe fell by 16% and nearly a quarter.

CTBCM: POSITIVE IMPLICATIONS AND POTENTIAL HURDLES

Pakistan's power sector has been on a path towards increased market participation since the early 90's. Implementing a Competitive Trading Bilateral Contracts Market (CTBCM) is the next step in that journey. As per decision of the ECC[1] Pakistan is expected to implement such a power market within three to four years from the date of approval of the CTBCM Plan. That Approval came from NEPRA in December last year. As per current implementation plan, CTBCM will see its Commercial Operation Date in November 2021[2].
With the implementation of CTBCM, players in the power sector will witness an evolution. This progress will reward prescient players while punishing unaware ones.

Potential of CTBCM for the Power Sector

First, bilateral contracts may finally lead to increased **demand creation**. Currently, the winter base demand is going through stagnation as evident in the figure below.

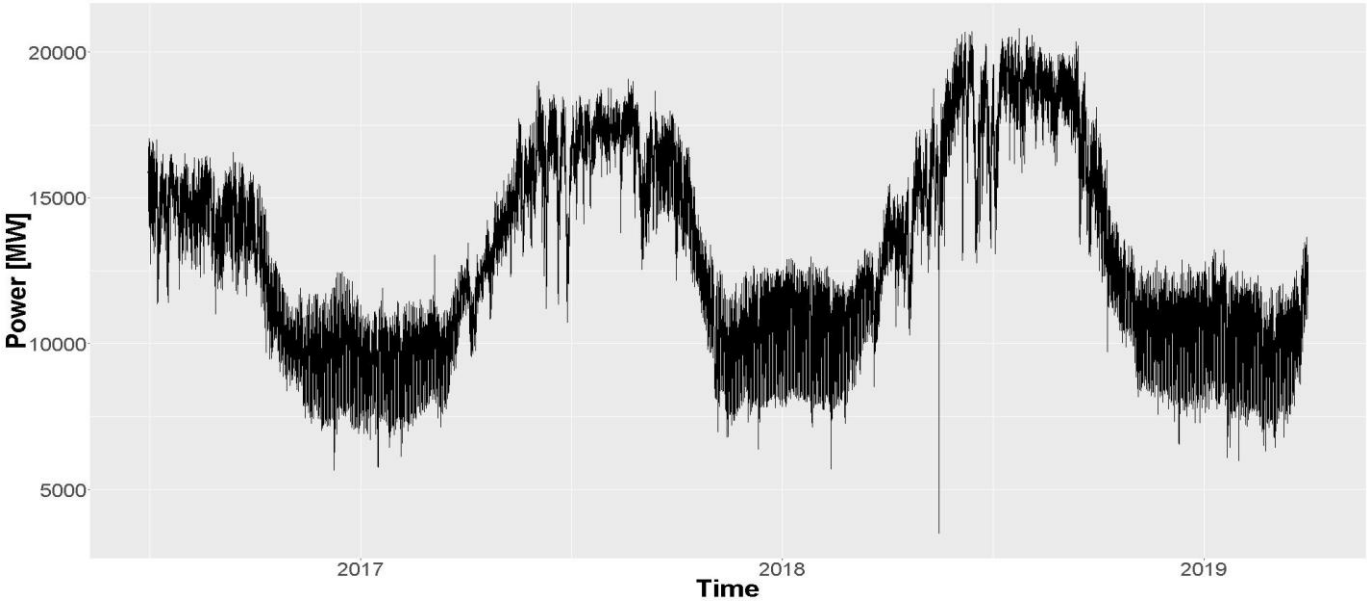


Figure 1 NTDC Load *Source: Pakistan Electricity Outlook 2020-25*

With bilateral contracts, the winter time demand can hopefully increase as industries decide to switch towards potentially cheaper on-grid power. Such an increase in winter demand will help reduce the load of capacity payments on the system.

CTBCM design also mandates **transparency** form multiple market participants. Such a transparency will have a number of positive effects. First it will help in **de-risking** of the sector via provision of information to current and future potential entrants into the market. In addition, provision of this information also motivates firms to improve performance with an incentive of converting performance into future brand power rather than minimum enforced contractual obligations of the past. Hence, **efficiency of industry leaders** such as HUBCO is expected to **spill over** into performance benchmarks of other IPPs.

Complete implementation of CTBCM will also reduce the direct role of government in the sector. Such a hands-off approach helps pave the way for **depoliticization of the sector**. This in turn will help bolster investor confidence that is expected to translate into lower risk premium in the long run.

[1] Economic Coordination Committee
[2] This is an Indicative Date conditions on NEPRA approval the implementation road map. Currently, only the conceptual framework has been approved by NEPRA.

Lower government presence also helps solve the **strategic confusion regarding public or private orientation** of the market. Such dubiety has stifled industry development since the early 2000's. With CTBCM, even government owned suppliers will be forced to play under market rules. Such a level playing field will ensure that no player is allowed to become inefficient solely on account of being a government owned entity.

In addition, CTBCM rules carry the appropriate mechanisms for timely expansion of the transmission network. Under the current regime, low recoveries often translate into underinvestment in the transmission system. With CTBCM that bottleneck will be obviated .

Finally, the CTBCM regime helps open the possibility of IPPs exporting power to other countries. This is a promising situation where Pakistani Current Account can reap peace dividends from Afghanistan. This can become a money saver especially considering the committed nature of fuel supply import contracts for LNG.

However, these benefits can only be realized once the CTBCM implementation road map can address potential challenges.

Challenges to CTBCM implementation

The most important of these challenges pertain to maintaining sanctity of contract vis-à-vis the Power Policy 2015 Power Plants. Under the current strategic plan, appropriate **changes will be made to the Power Policy 2015** in order to ensure compatibility with CTBCM. While this is a well thought out move for future, caveats need to be introduced that protect already established IPPS -under 2015 Policy- from alterations in the contract terms and conditions.

The second biggest hurdle towards implementation of CTBCM is Circular Debt. CTBCM will have to ensure the curtailment of **Circular Debt**. Otherwise the system could see lack of funds towards investment in Transmission and Distribution that are so pivotal to the establishment of the business.

The cash related hurdles for CTBCM also include **more expensive credit covers for DISCOS** as compared to the government. The Detailed Action Plan for implementation of CTBCM will have to cater for ways to reduce that financing differential in order to ensure that CTBCM has a positive influence on the overall financial health of the sector.

Moreover, the current arrangement for discussion of **TORs of assessment of financial health of DISCOS** will take input from a number of stakeholders. Currently IPPs are not one of those stakeholders. This is troubling considering that DISCOS are expected to be the main customers of IPP products[3]. Therefore, it is imperative that IPPs are made part of the committee that will help develop TORs of assessment of financial health of DISCOS.

Another condition that could become a hurdle to the market is **DISCOS being suppliers of last resort**. As more and more retailers enter the market, it is expected that industrial and low loss domestic customers will shift to appropriate demand aggregator services. This will make the demand portfolio of DISCOS riskier. Therefore, CTBCM will have to find mechanisms that follow an appropriate risk mitigation strategy without side-lining risky but politically important customers.

Such risk mitigation will have to be executed in an environment that rewards high recovery rates. Under the current plans for CTBCM, transmitters will be punished for unacceptable transmission losses by being forced to purchase the lost electricity units. However, **no such incentive arrangement has been propounded for DISCOS**.

Apart from Distribution, the transmission side of CTBCM will also have to face certain realities. First, CTBCM envisages only one Transmission Network Operator (TNO) i.e. NTDC. However, under the 18th Amendment -to the Constitution of Pakistan- the provinces are entitled to their own Transmission and Dispatch companies. These rights have been turned into reality with the creation of Sindh Transmission & Dispatch Company (Pvt.) Limited. A similar Transmission and Dispatch company is being considered for Khyber Pakhtunkhwa. The system will have to **adjust the role of TNO for presence of provincial Transmission and Dispatch Companies**.

[3] Energy Purchas and Capacity Obligations

By adapting to the various challenges CTBCM can help realize its stated aims of: Fare sharing of risk-reward, Removing Conflict of Interest, Sovereign guarantee free investment, Payment discipline, Market efficiency increase (new procurement + current use), Sustainability, Accountability, Transparency and Predictability, Open Access Information.

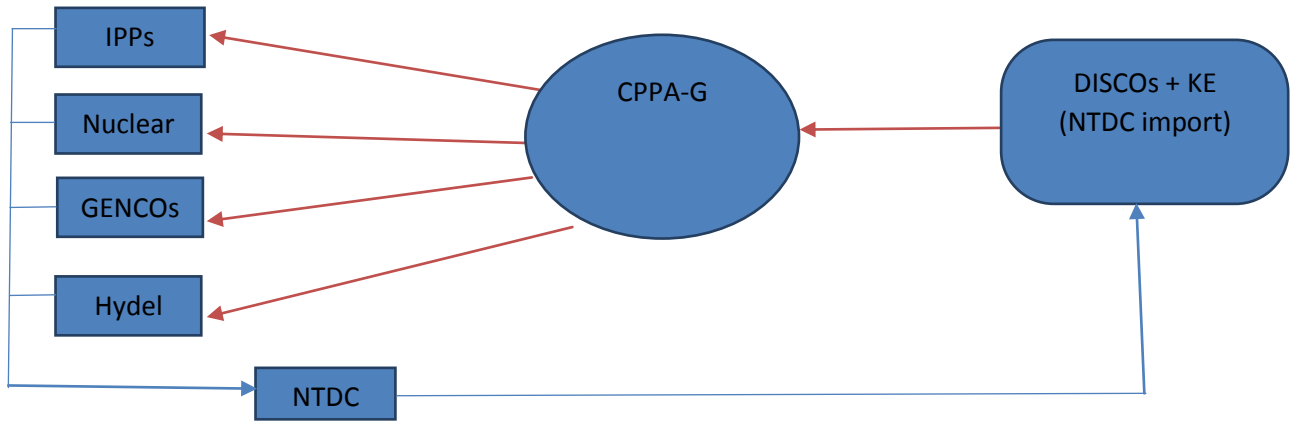
Conclusion

CTBCM is an overdue stride towards market orientation of the sector. With its implementation the sector is expected to see increased demand creation, transparency and expansion of the transmission network. In addition to opening the possibility of electricity export, the reform will also aid in depoliticization of the sector while giving it a private oriented strategic guidance.

However, at the same time the plan for CTBCM will have to be amended for a number of challenges including the circular debt, presence of multiple Transmission and Dispatch entities, maintenance of sanctity of contract vis-à-vis 2015 Power Policy investors and organizing appropriate financial arrangements for DISCOS.

Annexure – I
A Brief Overview of CTBCM

Currently the power market operates in Single Buyer model. This means that CPPA-G acts as a financial intermediator by buying power from all suppliers and selling it to all the DISCOS. Meanwhile NTDC ensures physical transfer of electricity from the power plant to the end DISCO network. The following image is a simplified overview of the sector structure where the red arrows indicate cash flows while blue arrows indicate energy flow.



Now, the financial transactions will take place directly between the generators and the end consumers via bilateral contracts. In order to make this conversion, a number of new entities have to be created. They are listed as following along with their functions and aims

Name of Entity	Constituents	Function	Aim
Generators	New IPPs + Old IPPs (in case of successful novation)	Provide Products of 1) Energy 2) Capacity Provision	Ensure generation of electricity using an optimal fuel mix as per Integrated Energy Plan.
Wholesale Suppliers	DISCOS	- Purchase electricity from Generators via bilateral contracts to be provided to customers or retailers - Can import or export power - Procure products from special regime power producers such as Neelum–Jhelum Hydropower Plant.	Act as reliable customers for generators.
Retail Suppliers	DISCOS + New Players (Demand Aggregators and Competitive Retailers)	Purchase electricity from wholesaler for further sale to end consumers.	Act as reliable service providers for small consumers.
Bulk Power Consumers	All consumers consuming more than 1	Purchase Power Directly from Generators or Retailers.	Allow large consumers (mostly commercial) to realize potential efficiencies that accrue

	MW		from bilateral negotiations.
Special Purpose Suppliers	Part of CPPA-G	- Current: Purchase Power from generators with legacy PPAs that have not been renegotiated with individual customers. - Perform invoice verification services for DISCOS. Note: Cannot sign new contracts - In future: will be used to sign contracts with generators of strategic significance.	To ensure Sanctity of Contract for old PPAs and to initially help DISCOS during the capacity build-up stage.
Independent Auction Administrator	Combination of PPIB and AEDB	- Perform new capacity procurement services until DISCOS develop individual auctioneering capacities to calculate demand gap between DISCSO demand and contracted capacity. - Help financially unhealthy DISCOS secure guarantees required for signing contracts. - Ensure Regulatory approval of new PPAs - Prepare Standard Bidding Documents - Align DISCO procurement with Generation System Indicative Expansion Plan (prepared by NTDC). - Help DISCOS sign contracts with generators.	Help ensure that lack of technical capacity does not lead to inefficiencies within the CTBCM regime.
Market Operator	Part of CPPA-G	- Ensure representation from other entities - Control Admission and Exit of Participants - Periodic Balancing Mechanism settlement - Dispute Resolution - Ensure all energy entering the system is under contract and all energy exiting the system is under contract. - Build Capacity of other players such as DISCOS - Creation of Contract Register - Settlement of Metering Systems	Ensure efficient CTBCM operations by performing oversight and due diligence functions.
Transmission Service Provider (TSP) or Transmission Network Owner (TNO)	NTDC	- Create Transmission Expansion Plan - Provide Transmission Services - Maintain Transmission Network as per Grid Code and Performance Standard Rules.	Minimize transmission bottleneck constraints.

System Operator	NPCC	- Ensure that supply meets demand
		- Planning and coordination of
		  - Maintenance Outages
		  - Economic Generation Scheduling
		  - Dispatch
		- System in balance with security and reliability constraints
		- Design special arrangements for dispatch of hydel.
			Maximize long-term health of transmission system via appropriate technical planning.

Planner	NTDC	- Develop the Transmission Development Plan (10 year Least Cost Transmission Expansion Plan) - Perform yearly review of Transmission Development Plan - Develop Indicative Least Cost Generation Expansion Plan	Guide the strategic development of the system in terms of generation and transmission expansion.
Metering Service Providers	NTDC	- Metering service for revenue meters at the Commercial Delivery Points (CDP) (provide services of commercial meter reading, Validating, Testing and Calibration)	Ensure measurement of energy delivery.

Once the new system is implemented, each market player has to be registered with the Market Operator. CPPA-G will break down into two organizations of Market Operator and Special Purpose Suppliers. Special Purpose Suppliers will novate all of the PPAs of the existing IPPs onto its portfolio and in turn have back-to-back arrangements with DISCOS (as Retailers) to sell electricity to them. Overtime as new bilateral contracts are signed, the market share of the Special Purpose Suppliers will eventually diminish and be replaced by the signing of new Bilateral Contracts.

In the new bilateral contracts, the payment and contract signing between DISCOS and generators will be bilateral. However due to the nature of transactions, minor differences will exist between the contracted energy and actual physical transfers of energy. These differences will be handled by the Balancing Mechanism. MO will oversee the execution of the Balancing Mechanism of these contracts.

Balancing Mechanism is not the only novel operation for DISCOS. They would also be expected to forecast demand under their areas (as retailers), sign PPAs with Suppliers, procure capacity, work under plans such as Least Cost Generation Acquisition Plans. In order to help DISCOS, Independent Auction Administrator (IAA) and Special Service Providers will help them perform the relevant duties. In addition, the Market Operator is expected to build relevant capacities within DISCOS. IAA is also expected to provide financial guarantees to cover to ill-performing DISCOS and help them ensure capacity obligations for future.

Meanwhile Planner, Transmission Network Operators, System Operators and Metering Service Providers are expected to ensure system stability in the short and medium term via planning and maintenance of an integrated system. Together these components are expected to create a decentralized yet organized energy market in the country that will pave the way for creation of dynamic markets such as net pools and power exchanges.

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, Baloshistan	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