



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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09 May 2017 – 15 May 2017

Safe drinking water again for newly liberated Ninewa Plains, Iraq

A major water treatment plant damaged in the fight against ISIL in Iraq has been repaired and is once again providing safe drinking water for hundreds of thousands of people in the Ninewa Plains, near Mosul.

Representatives of the Government of Iraq and UNDP's Funding Facility for Stabilization (FFS) this week reopened the As-Salamiyah Water Treatment Plant in Nimrud.

The treatment plant is one of the first major stabilization projects to be completed since the Government approved 202 projects in early April.

Almost all of the plant's equipment, including 19 water pumps, filters and retaining pools, have been replaced or rebuilt and the main electric transmission line between As-Salamiyah and Hamdaniyah has been repaired.

“When the treatment plant wasn't working all of the water that came from the pipes, if it came at all, was filthy,” said Khalwa, a resident of As-Salamiyah. “We had to go to the river to get water, and even that was barely suitable for washing. The water is much better now. We can even drink from the taps.”

At a ceremony marking the re-opening of the water treatment plant on Sunday, Dr. Mahdi Al-Alaq, Secretary General of the Council of Ministers, said: “We are doing everything we can to help liberated areas rebuild after ISIL. Providing basic services is key to ensuring that displaced Iraqis can return home with dignity.”

Ms. Lise Grande, UNDP Resident Representative for Iraq, said: “The Funding Facility for Stabilization is implementing more than 300 projects in eastern Mosul and liberated cities and districts in the Ninewa Plains. We're working as quickly as possible to re-establish water and sewage systems and electrical grids. Thousands of people, many from destitute families, are working on public schemes, earning income while they help to rebuild their communities.”

Ms. Grande said, “A lot needs to be done and we've promised the government and the people of Mosul that we will do everything possible to speed-up stabilization.”

Established in June 2015, FFS is working in newly liberated areas in Anbar, Salah al-Din, Ninewa and Diyala Governorates. More than 800 projects are completed or being implemented across 22 locations. Since the start of the crisis, over 1.7 million people have returned to their homes.

10/05/2017 online at:

<http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2017/05/10/safe-drinking-water-again-for-newly-liberated-ninewa-plains.html>

Retaken Iraq village faces water crisis

In the battle against militants in northern Iraq, the village of Sayramun was recaptured in February but remains as isolated as ever and crucially still has no drinking water. "There's no water in the area," Said Ahmed Fathi, a resident of the village nestled in a picturesque meander of the Tigris River but marooned in a key military staging area on the edge of the targeted city of Mosul.

The nearest water treatment plant has not functioned in months and restrictions on civilian movement in this area used by dozens of daily military convoys mean private vehicles are banned in Sayramun. "So here are our children collecting water from the river... and river water really isn't suitable for human consumption," Fathi said.

Ruqaya, wearing pink trainers and a bright orange dress, walks down the hill with a dirty plastic jerrycan to fetch water from the river, a task that falls on the five-year-old girl because her father is sick. She pauses by the roadside as a convoy of Iraqi Humvee vehicles hurtles past and then resumes her daily march to the Tigris while helicopters buzz overhead. Electricity has not been restored to Sayramun and the local water treatment plant also remains offline, forcing residents to drink boiled river water.

"How do we even boil the water? Until now, we're still using fire wood and small kerosene heaters. We don't have gas either," said Fathi. "We've had some bad cases... no deaths but poisoning because of the water," he said. "Nobody knows about us here in this village... We just want the plant to be fixed," said Thannun Yunis, a 14-year-old boy from Sayramun.

Some 70 families have returned to the village since the area was retaken from the Daesh group by Iraqi security forces, but the lack of water is an obstacle. "Even 60 years ago, our situation wasn't this bad, we have regressed dozens of years," said mayor Haj Abu Mohammed, who was among the villagers who decided not to stay in the tented camps they were taken to by the military when the Mosul offensive was launched. Access to water isn't always much better in the many camps that have mushroomed around Mosul since Iraqi forces launched their operation to retake the militants' last major bastion in the country.

The camps are overcrowded, there isn't enough bottled water for everybody and the water that is trucked in hasn't always been adequately treated because too few plants are operational. At one of the largest displacement camps in the area, in Hammam Al Alil, Yasser Ahmed is filling a jerrycan from a tank.

"They give us water bottles but not enough for drinking and cooking, so we use this water after filtering and boiling it," the 37-year-old man said. He explained that he then uses purification tablets distributed by the camp authorities to improve the quality of the water and use it for cooking.

Going back with his family to his neighbourhood of Maamun in west Mosul is not an option, he said, because the water situation there is even worse and people are using polluted wells. Apart from direct clashes, the combination of air strikes and the countless bombs set off by the militants often cause significant damage to the water distribution networks.

Reporters met some civilians who had returned to their homes after the security forces retook their neighbourhoods but then packed their bags again and left the city a second time due to the lack of water.

In Mosul, many residents are willing to brave the risk of ongoing fighting to go home but the lack of drinking water is holding them back.

"Temperatures are rising fast. People need safe drinking water and they will need a lot of it in the weeks and months ahead," the UN's humanitarian coordinator in Iraq, Lise Grande, said.

Temperatures are already hovering between 35 and 40 degrees Celsius in the Mosul region and regularly top 50 at the height of summer.

12/05/2017 online at: <http://www.khaleejtimes.com/region/mena/retaken-iraq-village-faces-water-crisis>

Iraqis fleeing Isis face dying from lack of water as dry summer season approaches

At midday in Hasensham internally displaced persons (IDP) camp, just outside Mosul, the pathways between rows of UN branded tents are deserted. A handful of people sit in shade under blankets strung across the ropes anchoring their makeshift homes to the ground; it's too hot to do much else.

"I'm glad it is safe here, but it's so boring, and it's so hot," 12-year-old Yusof says. "We don't even have a fan in our tent. Sleeping is hard and it's going to get hotter."

It's only mid May and the temperature is already hitting 37C. Roads, which a month ago were muddy from spring rain, now leave dust on shoes and clothing, and the sunlight reflecting off thousands of white tents is blinding even with sunglasses.

Last July, Basra in southern Iraq broke records when at 54C it became the hottest place on earth outside Death Valley. The mostly Kurdish north of the country didn't fare much better when the mercury reached 49C.

While searing heat is a part of every Middle Eastern summer, the abnormally high temperatures led the Baghdad government to declare a mandatory four-day holiday to help people cope.

That was back before the US-backed Operation Inherent Resolve to retake the city of Mosul from Isis began.

Iraqi coalition forces announced the campaign to liberate Mosul's estimated 1.5 million citizens from more than two years of Isis' brutality in October 2016, an operation both the Iraqi and US military confidently predicted would be over by the end of the year.

Seven months later, after a gruelling street-by-street battle which has seen heavy civilian casualties, more than 620,000 people have been displaced by fighting in total, and the battle for Mosul's city centre still rages.

While many people have been able to return home, around 480,000 are currently living in UN or Kurdish Regional Government (KRG) run camps, and more arrivals keep coming: 11,000 have fled south to Haman al-Alil in the last week, and up to 450,000 people are thought to still be trapped or unwilling to leave homes behind the front line.

Luckier civilians are bussed to IDP settlements by the army, but many new arrivals reach their destinations after walking for hours, dodging Isis IEDs (improvised explosive devices), sniper and mortar fire – a journey which will become even more dangerous under the scorching summer sun.

The campaign was not supposed to last this long. While the UN and non-governmental organisations (NGOs) have prepared contingency plans for new arrivals, building several annexes so existing temporary settlements can cope with demand, but now the weather is getting hotter they face new challenges.

Some older camps have housed IDPs since Isis swept across almost one third of Iraq in the summer of 2014, and at this point have installed power lines and semi permanent breezeblock housing. While still basic, the set up allows families to use fans inside – or at least rely on the cool concrete to bring indoor temperatures down to a bearable level.

At Hasensham, conditions are more rudimentary, and while Unicef dug three boreholes near the local river before escaping civilians began arriving last autumn, more are going to be needed soon.

Water from the boreholes is chlorinated and distributed at tanks around the site several times a day – a process known as “water trucking”.

Currently, team’s budget for an average of 10 litres of drinking water per person per day – but Chopy, Unicef’s Wash (water, sanitation and hygiene) programme facilitator at the camp, said that 15 litres will be needed before summer.

“We have three boreholes currently, and we are drilling another – it’s a race but we hope to be ready,” he said. “A lot depends on whether we get a big new influx of people, but it’s impossible to know at this stage.”

Ramadan, the month-long Muslim celebration in which adults are not supposed to eat or drink during daylight hours, begins 26 May – and also poses a problem, Chopy said. “We can move food deliveries and the water trucking to the night, that’s not a problem. It’s more the complications that might arise from dehydration.”

Inside Mosul itself, in areas to the east of the Tigris River, which were the first to see families move back into their homes, creating routes to truck safe drinking water into liberated neighbourhoods was the first measure humanitarian agencies put in place. Yet as the weather grows warmer the current supplies will not meet demand, said Melany Markham, media coordinator for the Norwegian Refugee Council (NRC) in Iraq.

“People from Mosul are so resilient, it’s incredible,” she said. “Families who have gone home to the east of the city have been trying to be self reliant, digging their own wells, in some cases. But it’s not safe. The water is not clean, it’s sulphurous.”

NRC and the United Nations Development Programme (UNDP) have this week been trying to get a damaged water sanitation plant in West Mosul up and running again, but progress is often stalled by the precarious security situation. Work on all 25 damaged plants is not expected to be completed for three months.

In the Karaj al-Shamal neighbourhood, Reuters reports that residents tired of waiting for the state or charities to get their water supply back online pooled their resources to repair the mains water pipe themselves – only to see it destroyed again in a coalition air strike the same day it was finished.

“During a visit to the West Mosul plant there was a dead body floating down the river from which people are supposed to get drinking water from,” Ms Markham said.

“If that doesn’t show quite how extraordinarily difficult the situation here is, I don’t know what does.”

13/05/2017 online at: <http://www.independent.co.uk/news/world/middle-east/mosul-battle-iraq-latest-refugees-idps-water-camps-unicef-displaced-fighting-a7734451.html>

Pell Frischmann in \$700m Iraq water system design

Pell Frischmann, one of the UK's leading engineering, development and management consultancies, said it has completed the design of a \$700-million water infrastructure rehabilitation project in Iraq with the help of Aconex, a major provider of the global platform connecting teams on construction and engineering projects.

The Water Supply Sector Loan Project involves refurbishing aging facilities and building new infrastructure to support the public health of residents in the Ninewa, Anbar and Salah El Din governorates of Iraq.

Pell Frischmann pointed out that the entire water system had been long overdue for a major upgrade.

"The people here badly needed this system," remarked Stewart Neal, civil engineer at Pell Frischmann and design manager on the project.

"Since water demand exceeded supply, water would be turned on for 24 hours in one zone of a city, and the next day water would be turned off in that zone and directed to another zone. The intermittent water supply and low water quality created public health risks," stated Neal.

In 2012, the Iraqi Ministry of Municipalities and Public Works utilised financing from the Japan International Co-operation Agency (JICA) for the redesign and reconstruction of water intake facilities, water treatment plants, transmission facilities, and distribution pipelines.

Following an international tendering process, the ministry awarded the design project to Pell Frischmann. Active in Iraq since 2004, the firm had won the British Expertise International Masterplanning Project of the Year Award in 2017 for its collaborative work on the country's transportation infrastructure.

With design teams in Exeter and London (UK), Baghdad (Iraq) and Mumbai (India) and a client in Iraq with an unreliable IT infrastructure and security issues, Pell Frischmann knew the project would present challenges.

The firm selected the Aconex platform to be able to store, access and share design data securely in the cloud, manage complex design reviews, track approvals, and keep all communications and processes connected to the project rather than lost on email or internal servers, said Neal.

Even then, Aconex helped Pell Frischmann quickly avert problems that the firm could not have anticipated.

"We found that the client preferred to review and approve designs on paper," explained Neal. "Sending design documents by mail or courier was expensive and time-consuming. File sizes and regional connectivity issues made email impractical," he added.

Aconex solved the problem with project-wide collaboration, connecting the entire team and all project data on a single platform.

The design phase of the project was completed on schedule due to the visibility and control Aconex gave Pell Frischmann," said Neal.

"There was never any ambiguity about who was holding up the workflow. Everyone could see who had approved designs, where the bottlenecks were and who needed to take action," he added.

On the achievement, Steve Cooper, the general manager, UK and Ireland, at Aconex, said the Iraqi water system design was yet another example of its leadership in Middle East infrastructure projects across multiple sectors.

"We are pleased with the opportunity to deliver value to Pell Frischmann and its project team, and we look forward to supporting the firm with similar projects in the future," he added.

14/05/2017 online at: https://www.tradearabia.com/news/CONS_324905.html

Water crisis worsens situation of Palestinians in Syria

The health situation of Palestinian refugees in war-torn Syria has been exacerbated by an acute water crisis, a London-based NGO said.

Water supplies to the Palestinian refugee camp in the southwestern Daraa city have been cut off for more than 1,122 days running, the Action Group for Palestinians in Syria (AGPS) said in a statement.

The NGO said water supplies to the Yarmouk refugee camp in Damascus have also been cut off for 973 days.

The group documented the death of 195 Palestinians due to lack of medical care over the siege imposed by Syrian government forces on the camps.

According to UN figures, there are around 450,000 Palestinian refugees still in war-torn Syria, the vast majority of who are in a dire need for medical care.

Established in 2012, AGPS monitors the situation of Palestinian refugees in war-ravaged Syria.

10/05/2017 online at: <http://aa.com.tr/en/middle-east/water-crisis-worsens-situation-of-palestinians-in-syria/815380>

Jordanian Prince: Sharing water could lead to ‘warm peace’ with Israel

An influential Jordanian prince has told a London audience including the Israeli ambassador that sharing water in the Jordan Rift Valley would help lead to a “warm peace” between the countries.

Prince El Hassan bin Talal, who is chairman of the United Nations Secretary-Generals’ Advisory Board on Water & Sanitation (UNSGAB), said water was one of several areas of cooperation envisaged in the 1994 Israel-Jordan Peace Treaty, but that the reality had fallen “very, very far short”

The prince was speaking at a Royal Gala Dinner in Whitehall on Tuesday night organised by British Friends of Neve Shalom / Wahat al Salam (NSWaS), otherwise known as Oasis of Peace.

A co-operative village located between Tel Aviv and Jerusalem, it comprises 65 families, a school and a spiritual centre, and was founded in 1978 as a place for Jewish and Palestinian-Arabs of Israeli citizenship to live side-by-side in equality.

In a light-hearted and heart-warming speech, in which the prince playfully asked the audience whether Arabists were still kosher, Hassan nevertheless warned that “undertones of divide-and-rule, Sunni versus Shia, are ringing alarm bells, as do the sale of advanced fighter jets and command-and-control systems worth billions... it seems that waging war is of great interest to those who benefit”.

However, the prince said water in the Jordan Rift Valley could be a cause for cooperation, rather than war, adding that in one project residents of 300 towns from three different nationalities share water resources and regulation.

“During 60 years of conflict in the Jordan Valley, water has more often been a source of cooperation than conflict,” he said.

“We have moved from narrow thinking about water, in terms of simple irrigation, and that one’s gain is another one’s loss, to a realisation that water has the potential to link or divide us, to separate us or to reconcile us.”

10/05/2017 online at: <http://jewishnews.timesofisrael.com/jordanian-prince-sharing-water-could-lead-to-warm-peace-with-israel/>

'Increased cyber alertness in Israel's energy and water infrastructure'

Israel is also preparing to deal with the cyber attack that hit 100 countries on Friday, disrupting public systems in various countries, and the Ministry of Energy on Saturday increased its cyber alertness in Israel's energy and water infrastructure.

Meanwhile, the British government said it was still unknown who was behind the massive cyber attack that also disrupted the health system in the European Union. At the same time, Russia's central bank reported that "massive" attacks on banks had been identified in the country, but were successfully thwarted. On the backdrop of the events, senior G7 leaders were discussing extensive cooperation against cyber threats.

The Ministry of National Infrastructures, Energy and Water said that Minister Yuval Steinitz announced an increased cyber alert in Israel's energy and water infrastructure following the international offensive, whose dimensions are becoming clearer.

According to the Ministry's announcement, the Ministry of Energy, the Israel Electric Company, the power plants and the energy and water infrastructure have recently conducted activities aimed at strengthening cyber defense and increasing alertness, in accordance with the current attacks.

It was also reported that these activities were coordinated by the Ministry of Energy's cyber center, which was established a year ago to protect Israel's energy infrastructure against cyber attacks.

13/05/2017 online at: <http://www.ynetnews.com/articles/0,7340,L-4961398,00.html>

US army disaster drill uses Israeli tech to extract water from air

As rescue forces head into disaster sites, all too often they struggle to maintain a steady water and food supply.

An Israeli firm known for generating water out of thin air – the Rishon Lezion-based Water-Gen – participated in a United States Army drill last week, testing its ability to help overcome such critical challenges.

During a five-day simulation in Indianapolis and Chicago, rescue units employed the company’s technologies while saving victims trapped in hotel buildings that collapsed due to tornadoes.

As the emergency forces worked to rescue their victims, they had access to Water-Gen’s medium-sized 350 gallon model water generators, which were stationed at the scene,

according to the company. The generators provided a constant supply of water to both the rescue workers and the victims, the firm explained.

“This experience is invaluable for us, from the training with military personnel to the understanding of how all the emergency organizations work together,” said Maxim Pasik, chairman of Water-Gen.

Water-Gen’s “GENius” technology first made waves at the AIPAC Policy conference in Washington at the end of March, when Prof. Alan Dershowitz presented the company’s device on stage and pulled water out of thin air. The technology works on-demand by trapping humid air inside the device, then cleaning and drying the air and extracting the resultant clean water, Pasik told The Jerusalem Post in an April interview.

Because the heat exchanger is made from plastic rather than aluminum, as has been typical in other such systems that extract water from air, Water-Gen’s technology is much more affordable, he said. Generating 1 gallon of water requires only 1 kilowatt of energy, he added.

The system is available as the medium-scale model used in the US Army demonstration, a home appliance for household use and a large-scale industrial water generator with a capacity of up to 6,000 liters of water per day.

While Water-Gen was the only Israeli private sector participant in last week’s simulation, ZAKA’s International Rescue Unit and the National Search and Rescue Unit of the IDF’s Home Front Command also participated, the company said.

“Water-Gen and ZAKA emergency preparedness training is ever-evolving, and we thank the US military for ensuring we are more prepared to save lives and offer relief efforts if needed,” Pasik added.

Aside from the US Army, among the Americans involved in the simulation were a specialized unit from the Federal Emergency Management Administration (FEMA), a National Guard regional unit, the Chemical Biological Incident Response Force of the US Marine Corps and delegates from a variety of other authorities.

The program “is an opportunity for members of the military and local responders to share best practices for critical tactics, techniques and procedures in response to natural disaster,” a statement from the Indiana National Guard said.

15/05/2017 online at: <http://www.jpost.com/Business-and-Innovation/Tech/US-Army-drill-uses-Israeli-tech-to-extract-water-from-air-at-disaster-sites-490801>

Japan offers aid to Jordan to improve water sector amid influx of Syrian refugees

Japan on Thursday offered about 22.4 million US dollars in aid to Jordan to improve the water supply conditions in the northern areas of the kingdom hosting Syrian refugees.

The aid is the second phase of a Japan-funded project, named "Urgent Improvement of Water Sector for the Host Communities of Syrian Refugees in Northern Governorates," according to Japanese Ambassador in Amman Shuichi Sakurai.

Jordan has one of the lowest levels of water resource availability, per capita, in the world. Water scarcity has been exacerbated by influx of some 1.3 million Syrian refugees.

Jordan's government has repeatedly called for more international support to countries that host Syrian refugees.

12/05/2017 online at: <http://www.globaltimes.cn/content/1046614.shtml>

Qatar Charity provides clean water for Taiz residents

The stop of well pumps due to the lack of diesel encouraged QC in cooperation with Sobol Charity to provide clean water for people in Taiz.

This project provides 104 barrels of diesel per month to ensure the operation of the pumps of 8 major wells in the province, which will provide water for more than 300,000 people living in difficult conditions because of the imposed suffocating siege.

Mr. Al- Ka'bi said that QC implemented this project in Taiz aiming at reducing the diseases, displacement of people, and protecting people from the dangers of indiscriminate shelling during their journey to search for water in places far from their homes. He indicated that QC has implemented many other projects in Yemen regarding water and sanitation. Al-Ka'bi thanked the philanthropist of Qatar for donating to help in the reoperation of 8 wells in Taiz by providing the diesel.

At a cost of QR 60,000, QC previously cooperated with Al-Dawa Islamic Organization to renovate, rehabilitate, and furnish 6 schools in Marib in order to be able to continue their educational mission.

These 6 schools are Al-Mutawakil, Al-Durra, Al-Faruq, Jafra, Sahari and Humaidah in Majzr, El- Wadi, and El-Medina directorates.

Urgent Relief

QC has recently implemented "Emergency Relief" project, where it distributed 2,500 food baskets to contribute to relieving famine in the targeted area, whose population suffers from poverty, rising food prices by which fostering a spirit of social solidarity and securing food needs for beneficiaries.

11/05/2017 online at: <http://reliefweb.int/report/yemen/qatar-charity-provides-clean-water-taiz-residents>

Ethiopian request postpones Nile Council of Presidents summit

The Nile Council of Presidents summit, which the Ugandan president has called for, was postponed to mid-June rather than 25 May in the Ugandan capital Kampala, after an Ethiopian request, local media reported.

Ethiopia said that it needs time to study the Egyptian proposal about the Entebbe Agreement. The proposal is consistent with the international agreements and laws that organize relations between the countries of international rivers.

The Egyptian proposal includes a technical study of the lost water in jungles, and the acquisition of common cooperation projects, which was approved by the Nile Basin Initiative and was stopped after the Entebbe agreement in 2010.

Egypt had frozen its membership in the Nile Basin Initiative in October 2010 as a reaction to the signing of the Entebbe Agreement by the source countries. Egypt put three conditions forward in order to sign the agreement, including the water security, the previous notice, and approving with consensus, not the majority.

The ministries of foreign affairs of the participating states in the summit are supposed to hold a meeting before the presidential summit to discuss the Egyptian proposal and approve it before the presidential approval.

Egypt will discuss in the summit the negative impacts of climate change on the river's source countries and review the results of these impacts.

The Tripartite National Committee on the Renaissance Dam (TNCRD) held a meeting in Cairo in April in order to discuss the initial reports by consultancy firms (BRL and Artelia) tasked with assessing the possible impact of the dam on downstream countries.

Cooperation between Egypt and Ethiopia has improved after years of political dispute. Egypt's main concern since the GERD's establishment in 2011 is its water retaining capacity. Utilizing more Nile water than any other country, Egypt fears the Dam will have a detrimental effect on its share of the river's water.

Egypt and Ethiopia had been locked in a diplomatic dispute relating to the construction of the Renaissance Dam, which reached a peak in 2013.

In 2013, whilst serving as Minister of Defense, Al-Sisi rejected the idea of using military force to resolve water issues. At the time, he said that Egypt would look for a peaceful resolution to differences while moving forward

14/05/2017 online at: <http://www.dailynewsegypt.com/2017/05/14/ethiopian-request-postpones-nile-council-presidents-summit/>

China to invest \$50bn for mega dams in Pakistan

In a first-of-its-kind investment in Pakistan's troubled energy sector, Islamabad and Beijing on Saturday signed a memorandum of understanding (MoU) to develop North Indus River

Cascade with an estimated cost of US\$ 50 billion that has the potential of generating approximately 40,000mw of hydroelectric power.

Under the initiative, initially five huge dams will be built in a region that starts from Skardu in Gilgit-Baltistan and runs through Khyber-Pakhtunkhwa as far as Tarbela, in the first-ever private sector investment in Pakistan's mega hydel projects as only Water and Power Development Authority (WAPDA) would undertake such projects in the past.

With the inking of the MoU - signed by Water and Power Secretary Yousuf Naseem Khokhar and Chinese Ambassador in Pakistan Sun Weidong and witnessed by Prime Minister Nawaz Sharif - China has emerged as the biggest financier of infrastructure projects in Pakistan. This \$50 billion investment is in addition to the \$57 billion projects being executed by Beijing in power and road infrastructure sectors in Pakistan under the China-Pakistan Economic Corridor (CPEC).

Under the MoU, China's National Energy Administration (NEA) would oversee financing and funding of Diamer Basha Dam, Patan Hydropower Project, Thakot Hydropower Project, Bunji Hydropower Project and Dasu Hydropower Project. All these projects have an estimated power generation capacity of 22,320mw, according to WAPDA estimates.

The initiative also includes development of Diamer-Bhasha Dam, for which a huge investment of \$15 billion is needed and Pakistan has been running from pillar to post for the past several years to secure funding but to no avail, reportedly due to influential Indian directors sitting at international donor institutions. Even World Bank and the Asian Development Bank refused to provide funds for the project. Rather, each time Pakistan was advised to focus on small dams, which, according to them, were more feasible and risk-free.

A well-placed source in the Ministry of Water and Power told Daily Times that the NEA experts had already conducted feasibility study of the entire North Indus Cascade including the sites of above mentioned five projects in February 2017.

After the signing of the MoU, the Chinese experts will conduct a detailed study spanning over a period of three months to develop a roadmap for financing and initiation as well as execution of these mega projects.

China Three Gorges Corporation, the owner of the world's largest hydroelectric power project Three Gorges Dam, already expressed its willingness in 2015 to participate in a financing consortium to fund nearly \$50 billion of hydroelectric power projects in Pakistan.

The signing of the MoU was followed by a conference in Beijing where heads and representatives of several Chinese power sector companies gave presentations on their studies of the Diamer Bhasha Dam project. Water and Power Secretary Yousuf Naseem also gave a briefing to the Pakistani and Chinese delegations.

Prime Minister Nawaz Sharif, in his address to the conference, spoke high of the cooperation by Chinese government as well the National Energy Administration to help Pakistan cope with energy crisis through building power generation projects.

The prime minister said Pakistan not only required support in the energy sector but also needed mega initiatives to improve its water storage capacity for economic development and long-term prosperity. “Therefore, development of the North Indus Cascade is a major focus of my government and the construction of Diamer Bhasha Dam is the single most important initiative in this regard,” the prime minister said.

The prime minister said apart from helping Pakistan in addressing the issue of power shortage, the NEA had also supported Pakistan’s power sector experts in going through the critical learning curve. He thanked the NEA for hosting an extremely important and strategic session on Diamer Bhasha Dam, which, according to him, was a project of critical importance for the future of Pakistan. He said water and food security was of paramount importance for Pakistan keeping in view the challenges posed by climate change.

14/05/2017 online at: <http://dailytimes.com.pk/pakistan/14-May-17/china-to-invest-50bn-for-mega-dams-in-pakistan>