

## Bangladesh enters nuclear energy era

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ministry, told The Daily Star.

Md Zahedul Hasan, managing director of the Nuclear Power Plant Company of Bangladesh Ltd (NPCBL), said, "We must navigate a challenging test phase during commissioning. Tests will be conducted at various stages to prepare the Final Safety Analysis Report."

This pilot operation will take between six months and a year. "During this time, engineers will monitor synchronisation, turbine generator functions, and the efficacy of emergency support systems," he said.

While this initial output serves as a critical trial of the plant's capabilities, full commercial operations will follow only after the successful completion of rigorous commissioning protocols, Zahedul said.

The International Atomic Energy Agency will monitor the process, directly supervised by the Bangladesh Atomic Energy Regulatory Authority, he added.

Located on the bank of the Padma river in Ishwardi, the \$12.65 billion plant is the single largest infrastructure investment in Bangladesh's history. It consists of two units with two generation-III+ VVER-1,200 reactors built with Russia's financial and technical assistance.

Once both units become fully operational, the plant will generate 2,400MW, accounting for around 10 percent of the country's installed electricity generation capacity.

Unit-1 was slated for completion in 2022, but it faced delays due to several factors, including soil stabilisation issues, the Covid-19 pandemic, setbacks in grid line construction, and logistical disruptions caused by the Russia-Ukraine war.

Consequently, the total cost rose to Tk 1,38,685 crore from Tk 1,13,089 crore. The addition of 10 new project

components, the depreciation of taka, and revised costs for maintenance and advisory services also contributed to this cost overrun.

According to officials, unit-2 is nearing completion and is expected to start commercial operation in 2028.

At present, Bangladesh has an installed generation capacity of 28,919MW from 136 power plants, including government, non-government, and imported sources. However, over 95 percent of this capacity relies on fossil fuels, of which 70 percent is imported.

Despite having high capacity on paper, the country often struggles to meet daily demand of under 18,000MW due to fuel shortages, a problem compounded by the US-Israel war on Iran. Experts say the demand could exceed 30,000MW by 2030.

"We are heavily dependent on imported fossil fuels. In the current global context, we are unable to secure sufficient fuel to operate most plants, which has severely hampered power generation," said Md Zahurul Islam, member (Planning and Development) at Bangladesh Power Development Board.

The addition of nuclear power to the national grid is expected to resolve this crisis by providing a stable, "base-load" power which is not subject to the volatility of global fossil fuel prices.

To transmit the electricity, the Power Grid Company of Bangladesh has built five new grid lines. Of them, three lines spanning 370 kilometres from Rooppur to Gopalganj, Bogura, and Baghabari are already complete.

Md Delwar Hossain, chief engineer of Power Grid Company of Bangladesh, said the lines have failovers and are ready to transmit power. The price of electricity per unit has not been finalised, but the NPCBL expects it to be cheaper than

coal-generated power.

### SAFETY MEASURES

Built in line with post-Fukushima safety standards, the plant features passive safety systems and self-cooling for 72 hours without human intervention.

It has a "core catcher", a safety vessel designed to contain molten fuel in the unlikely event of a core meltdown. Besides, there are "double-containment" reinforced concrete layers to prevent radiation leaks and protect against external impacts.

Prof M Shamsul Alam, energy adviser to the Consumers Association of Bangladesh, voiced concern over both safety and operational costs. Past incidents in the energy sector were caused by negligence and substandard practices, yet accountability was never ensured, he said.

Initially, officials projected that power would be generated at Tk 6 per unit, but now estimates suggest the cost could climb to Tk 12 per unit, Prof Shamsul said. "If that is the case, then the very justification for taking such risks – cheap electricity – collapses," he said.

Shawkat Akbar, who served as the project director from 2008 to 2024, said that as the plant transitions from the construction to the operational phase, focus now should be on building a nuclear culture that prioritises safety and security above all other organisational goals.

"During the construction period, our priority was industrial safety; but as we begin the physical startup, we must focus on nuclear safety," he said.

Project officials said 56 licensed Bangladeshi engineers will work alongside Russian experts after passing the required examinations and demonstrating their competence. Around 1,100 local personnel will be engaged at the site, with more engineers and technicians in the pipeline.

## Shadow over future nuclear energy ambition

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sides were starting the discussion of new projects.

Bangladesh expressed a "strong interest" in the construction of two more power units at Rooppur NPP site, he said, adding that the possibility of constructing a multi-purpose high power research reactor was also being reviewed.

But after signing the trade deal with the US, if Bangladesh pursues additional units now, the agreement could restrict its choice of suppliers.

If Russian and Chinese options are

effectively excluded, the economics shift. Western vendors are costlier, financing terms are less favourable, and delivery timelines are historically uneven.

A constitutional issue regarding the deal also lingers. Whether the US trade agreement requires parliamentary ratification – or could be rejected – remains unclear. Given its long-term implications for Bangladesh's energy sovereignty, the absence of legislative scrutiny would be contentious.

Bangladesh, a country of 170 million people, suffers chronic

electricity shortages that hamper industrialisation and depress living standards. While it is trying to industrialise and reduce reliance on costly fossil fuel imports, restricting access to cheaper suppliers will raise the cost of that transition.

For now, as Prof Tamim suggests, the approach is to "wait and watch how these diplomatic and legal constraints affect existing and future nuclear projects".

The current units may be safe. The future of the programme is far less certain.

## 'We pledge to change the fate of the nation'

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has clearly taken a position in favour of prosecuting those involved in the killings during the July-August mass uprising. "But we saw some people saying that after August 5, they would pardon everyone."

He said those who speak loudly in public are the same people who travelled far from Dhaka to meet a collaborator of fascism but could not explain the meeting when confronted by locals.

Additionally, Tarique said, "Our [the ruling BNP's] priority is education for mothers and sisters, healthcare for children, vaccines for them, jobs for unemployed youth, support for farmers, and ensuring medical services for all."

He also mentioned plans to expand education, healthcare services, and job creation across the country.

Tarique said the BNP has signed the July Charter with political parties and will fully implement it in parliament, and urged vigilance against those trying to "create confusion".

"Some groups tried to mislead people during different periods of history, including in 1971, 1986, and 2009," he said, alleging that the same quarters are again attempting to create confusion in 2026.

Earlier in the morning, he

addressed a gathering on the bank of the historic Ulashi Canal after inaugurating its re-excavation work in Jashore's Sharsha upazila of Jashore.

There, he said, "Some individuals and political parties are now trying to divert the referendum in a different direction and confuse the people."

He added that such elements were seeking to create disorder in the country, which could obstruct the government's development programmes and harm public welfare.

**LPG CARDS FOR WOMEN, FREE EDUCATION UP TO DEGREE LEVEL**  
At the Eidgah ground rally, Tarique Rahman said the government will introduce LPG cards for women alongside the existing family card programme to ease cooking-related hardships.

"Our mothers and sisters face difficulties every day. They struggle to manage food for their families. They also have to cook, and for that they need gas or firewood. This creates problems."

Considering this hardship, he said the government decided two days ago to introduce LPG cards for women.

"Half of Bangladesh's population is women. If they remain behind, the country cannot move forward.

That is why we want to make women economically self-reliant."

Tarique also referred to previous initiatives by former Prime Minister Khaleda Zia, saying she had made girls' education free up to the school level and later up to the intermediate level.

"We [the BNP government] have decided that girls' education will be made free up to degree level. We will also provide stipends for those who achieve good results."

### OTHER PROGRAMMES

The PM unveiled the foundation plaque of a 500-bed Jashore Medical College Hospital building at Harinar Beel in the Chachra area in the afternoon, reiterating his government's goal to improve and expand access to healthcare services.

Later in the afternoon, Tarique Rahman visited the historic Jashore Institute Public Library, where he said the government has taken a plan to encourage reading habits among children, keep them away from excessive mobile phone use, and reduce their dependence on digital devices.

"We want to develop the habit of reading books. We want to bring children away from mobile phones and into playgrounds and books. This is our plan."

## DCs' proposals expose health sector ills

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an ICU at the general hospital, along with ensuring adequate manpower and medicine supply at medical facilities.

The is one of the proposals put forward by DCs to the cabinet division ahead of the Deputy Commissioners' Conference scheduled for May 3-6.

The cabinet division has received more than 80 health-related proposals from deputy commissioners and divisional commissioners across the country, The Daily Star has learnt from people informed about the proposals.

These proposals highlight the chronic problems of the country's healthcare system, particularly in rural areas, where hospitals exist but lack doctors or nurses, and where equipment is available, there are no trained personnel to operate it.

Even where facilities are in place, essential medicines and ambulances are lacking, leaving people unable to access the healthcare services they need.

The proposals include expanding hospital capacity, providing manpower, introducing water ambulances and supplying medical equipment in rural areas where shortages of the essential resources are hindering access to basic healthcare.

Take the case of the Tangail Medical College Hospital, a 500-bed facility that started operation in 2022. The facility has a 10-Bed ICU wing but was never functional due to the absence of a central oxygen supply system.

The hospital was supplied with a catheterisation lab but it cannot be used for treating heart patients because of a shortage of trained personnel, said its director Abdul Kuddus.

The warranty period for the machine has expired without being used once, he said, adding that some parts of the machine are not functioning now.

Typically, a 500-bed hospital requires more than 750 manpower, but 200 people are now working at Tangail Medical College Hospital against 322 sanctioned posts.

Patients face further hardship as the hospital does not have any ambulances, forcing them to rely on private services.

Against this backdrop, the Tangail DC has proposed installing a central oxygen supply system, deploying required manpower and providing at least two ambulances so the hospital can deliver essential services.

In another proposal, the Tangail DC sought manpower support for the 250-bed General Hospital, where 44 doctors are currently working against 178 posts. Besides, only 13 sanitation workers are employed.

Barishal DC sought water ambulances, along with drivers and fuel for three upazilas that are surrounded by rivers: Muladi, Hija and Mehendiganj.

Pirojpur DC also proposed introducing a water ambulance for Nesarabad, Nazirpur, Bhandaria and Mathbaria upazilas.

Madan Upazila Health Complex in Netrokona District was upgraded to a 50-bed hospital from a 31-bed facility over a decade ago. However, no new building was constructed, leaving the authorities to operate the hospital in a congested old structure, said Netrokona Civil Surgeon Golam Mawla.

The Netrokona deputy commissioner has proposed rehabilitation of the hospital building, deployment of necessary manpower and procurement of at least two ambulances for each upazila health complex.

The government built a 20-bed Trauma Centre near Bahubal Upazila Health Complex, located approximately 200 metres from the Dhaka-Sylhet highway in 2023, but the specialised facility remained unused for three years due to a lack of manpower.

No post for manpower for the hospital has been created even though they have sent letters to the higher-ups on several occasions, said Abdullah Maruf Faruque, Bahubal upazila health and family planning officer.

Besides, there is no budget allocation for the hospital, so the facility remained unused, he said yesterday.

In this situation, the Habiganj deputy commissioner has proposed taking steps to recruit the necessary manpower to make the hospital functional.

Thakurgaon deputy commissioner has proposed the establishment of a 100-bed specialised children's hospital in the district.

The 250-bed Thakurgaon District General Hospital currently has a 40-bed paediatric ward, but on average, 180-200 child patients are admitted every day, he said.

The Magura DC has proposed formulating a policy to set and standardise medical test fees at

diagnostic centres across all districts of the country.

The Rangamati DC has proposed formulating a coordinated deployment policy to ensure healthcare services for the people of the three hill districts.

Most upazila health complexes in the Chittagong Hill Tracts (Rangamati, Khagrachhari and Bandarban) are located in remote areas.

As a result, it is difficult to post doctors, nurses and midwives there, and even when they are posted, they do not tend to stay for long, he added.

Non-utilisation of many existing healthcare facilities and equipment is a very common phenomenon in the health sector, said Prof Shafiq Nahin Shimul, director of the Institute of Health Economics at the University of Dhaka.

"It is causing a double loss." On one hand, the money spent on building facilities or procuring equipment remains idle; on the other, people are not receiving services, he said.

"This is a management problem," he said, adding that the government should revise its management approach.

For example, it can sign contracts with third parties to operate these facilities, given the overall manpower shortage in the sector.

Asked about the reasons, he said many facilities are built and equipment procured based on political considerations and the financial interests of vested groups rather than need-based allocation.

"This malpractice must be stopped, and the government must ensure need-based allocation when building facilities or purchasing equipment," he added.

Abu Hussain Md Moinul Ahsan, director (hospitals) at the Directorate General of Health Services (DGHS), said the main issue behind the ICU crisis is the shortage of skilled manpower.

"We are working on how this can be mitigated. We have discussed providing short-term training to health workers to activate existing ICUs," he told The Daily Star on Monday.

Asked about non-functional medical facilities, he said many were built without proper planning, particularly 21 trauma centres. "We are now working on how to make those facilities functional."

in a pressurised condition. Water in our kitchen pot boils at 100 degrees Celsius. But since the water inside the reactor is pressurised, it does not boil, even when its temperature is over 300 degrees Celsius.

This hot water is then used for boiling water in another chamber and creating steam, which turns a turbine connected to an electricity generator.

A generator is just a fancy electric motor. The basic principle of a generator is the same as the electric motor used in most households to pump water to the roof-top tank. The generator just works in reverse. Instead of using electricity to turn a shaft, in a generator the shaft turns to produce electricity.

## Iran 'offers to end Hormuz chokehold'

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and Araghchi's visit had fanned hopes for fresh negotiations over the weekend, until US President Donald Trump scrapped a planned trip by his envoys Steve Witkoff and Jared Kushner.

"The US approaches caused the previous round of negotiations, despite progress, to fail to reach its goals because of the excessive demands," Araghchi said yesterday.

After nixing his emissaries' trip, Trump told Fox News that if Iran wanted talks, "they can call us" – though he has said the cancellation does not signal a return to hostilities.

Following their meeting, Putin and Araghchi both voiced their commitment to the two countries' "strategic relationship".

Araghchi said the war with the US and Israel had shown the world "Iran's true power" and the stability of its governing system.

In a sign that back-channel diplomatic efforts were ongoing, the Fars news agency said Iran had passed "written messages" to the Americans via Pakistan spelling out red lines, including nuclear issues and the Strait of Hormuz.

US media outlet Axios – citing a US official and two other sources – reported that Iran had sent a new proposal to end the war centred on reopening Hormuz and ending a US naval blockade there, with nuclear negotiations postponed.

An unnamed US official and two other sources familiar with the matter told the outlet that Araghchi mentioned the plan during back-to-back visits to Islamabad, informing the Pakistani, Egyptian, Turkish,

and Qatari mediators that Iran's leadership has no internal consensus on how to address Washington's nuclear demands.

The US has insisted that Iran dismantle its nuclear program and hand over all of its enriched uranium.

According to the Axios report, the proposal, which was delivered to the White House via Pakistani intermediaries, reportedly focuses on extending the ceasefire or even ending the war, as well as lifting the US blockade of Hormuz, a critical chokepoint accounting for 20 percent of the world's seaborne oil trade. Nuclear talks would not start until the blockade is lifted, according to the reported plan.

According to Al-Mayadeen, Tehran has floated a three-stage framework: end the hostilities and secure binding guarantees against renewed attacks on Iran and Lebanon; establish a new legal regime for managing the Strait of Hormuz in coordination with Oman; and, in the third stage, address the nuclear issue.

According to media reports, Iran has insisted on guarantees of US non-aggression, lifting all the sanctions, control over the Strait of Hormuz, and recognition of Iran's right to nuclear enrichment, dismissing US and Israeli accusations that it is seeking to acquire a nuclear weapon.

Iranian state news agency IRNA cited the report without denying it.

Meanwhile, the head of the UN's maritime agency yesterday rejected the idea of imposing fees on ships passing through the strait.

"There's no legal basis for the introduction of any tax, any customs, or any fees for on straits for international navigation," IMO

secretary-general Arsenio Dominguez said at a press conference.

Trump, meanwhile, was expected to hold a meeting with his top national security advisers later yesterday to discuss the stalled talks and how to proceed, Axios and ABC News reported.

Trump is facing domestic pressure to find an off-ramp as fuel prices rise, with midterm elections due in November and polls showing the war is unpopular among Americans.

However, contrary to the reports, Iran's Revolutionary Guards have said they have no intention of easing their market-rattling chokehold.

Ebrahim Azizi, head of the national security commission in Iran's parliament, told state television yesterday that a proposed law for managing the strait would make the Islamic republic's armed forces the overseeing authority, with financial gains from the waterway to be paid in Iranian rial.

Gulf states are also suffering from the strait's closure after absorbing weeks of Iranian drone and missile barrages that shut their skies and damaged their vital oil and gas infrastructure during the war.

Yesterday, the United Nations Security Council convened a Bahrain-initiated session in which dozens of countries jointly called for Iran to reopen the Strait of Hormuz fully.

France's Foreign Minister Jean-Noel Barrot told the Security Council that Iran must be ready to make "major concessions" in talks to end the crisis.

"There can be no lasting solution to this crisis unless the Iranian regime agrees to major concessions and a radical shift in its stance," he said.

## How power is generated at a nuclear plant

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The idea is: they absorb most of the neutrons generated by the splitting of atoms before they can hit other atoms.

Uranium is found in mines but most of it is uranium-238 which is not useful for fission. Only 0.72 percent of the mined uranium is uranium-235 that can take part in fission. To use it as a fuel in a reactor, the mined uranium has to be enriched, in the case of Rooppur power plant, to the level of just under 5 percent.

The uranium fuel is made into pellets and then put into rods.

"The nuclear fuel pellet is stacked inside corrosion-resistant metal tubes [Zirconium alloy tubes], called fuel

rods... A fuel rod of unit-1 contains approximately 350 to 380 pellets, with a total fuel column height of roughly 3.73 metres within a fuel rod that is roughly 3.93 to 4.0 meters long with a 9.1mm outer diameter," said Mohammad Shawkat Akbar, former chairman of Bangladesh Atomic Energy Commission.

The fuel mass inside the reactor alone can weigh over 80 tonnes.

Once all the fuel is loaded inside the reactor core, the control rods, the ones that absorb the neutrons, are partially withdrawn so that the chain reaction can proceed and heat is generated.

This energy is used to heat up water. In the case of the Rooppur plant, the energy is used to heat water

while implementing the programme and stricter vetting when selecting beneficiaries, The Daily Star has learnt from people involved with the proceedings.

The finance ministry's observations are in line with the World Bank and the International Monetary Fund, which advised against rushing the implementation and duplication.

At the meetings held on the sidelines of the WB-IMF Spring Meetings in Washington DC earlier this month, the WB advised rolling out the Family Card programme first in districts identified by its poverty map as having the highest number of poor people, The Daily Star has learnt from people with direct knowledge of the discussions.

It also recommended creating a proper database and coordinating with other programmes to ensure that the truly poor benefit from the monthly Tk 2,500 cash support.

"During the pilot phase, there were some minor errors, but they are very few – not even 1 percent," Khosru told reporters yesterday after the meeting at his office in the Secretariat.

About 37,000 people had already been included in the pilot project, Khosru said.