Bangladesh Can Get Solar Power At 6 Cents Per Unit

Shahriar Ahmed Chowdhury

Bangladesh's most viable renewable source is solar, followed by wind. The 20% target by 2030 seems ambitious with current initiatives, especially as only five years remain. However, if we can follow global best practices, it is achievable. If we maintain momentum, reaching 50% renewable energy by 2040 is possible, considering the declining cost of RE technologies. For example, Vietnam introduced a feed-in tariff with a one-year deadline, which resulted in the installation of 9,000 MW of rooftop solar within a year. Bangladesh can emulate this.

The renewable energy targets set for 2030 in the national RE policy are ambitious considering the current initiatives. However, Bangladesh can achieve more if the right steps are taken. Bangladesh can procure solar electricity at less than 6 US cents per unit at current market prices of technologies if land and power evacuation (transmission) facilities are made available from the government side and investment proposals are invited accordingly.

Shahriar Ahmed Chowdhury, Director at the Centre for Energy Research of United International University, made the remarks in an interview with ***Mollah Amzad Hossain,*** Editor of Energy & Power magazine.

The Renewable Energy Policy 2025 has been finalized. How would you evaluate it?

The 2008 policy had only two numerical targets: renewable energy should be 5% of total electricity generation capacity by 2015 and 10% by 2020. Beyond that, there were no such specific directives. In contrast, the new policy is structured across 20 chapters, covering strategy, technology, legal framework, institutional capacity building, battery storage, grid capability, Renewable Purchase Obligation (RPO) for utilities, Renewable Energy Certification, etc., all of which are appreciable.

However, the responsibility of implementing all of these has been given to SREDA (Sustainable and Renewable Energy Development Authority). In my view, with current resources, it is challenging for SREDA to execute these tasks. If we truly aim to achieve these targets, SREDA must be empowered and equipped with skilled personnel.

The policy sets targets of a 20% renewables share in electricity demand by 2030 and 30% by 2040. It would have been better if these were specified in terms of absolute capacity in megawatts, or the RE capacity as a percentage of total installed power generation capacity, rather than percentages of demand.

The policy outlines a roadmap to achieve 20% of electricity demand from renewables by 2030 and 30% by 2040. What strategy do you think is necessary?

Though it is not clearly mentioned, we assume that 20% of peak demand will come from renewables by 2030, and 30% by 2040.

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For example, Vietnam introduced a feed-in tariff with a one-year deadline, which resulted in the installation of 9,000 MW of rooftop solar within a year. Bangladesh can emulate this.

Additionally, utilities should have a rational renewable energy purchase obligation. The net metering policy should be updated to allow users to install a RE system of 100% of their sanctioned load, up from the current 70% and it should allow more if their roof space and the utility's distribution network allow.

Many believe that the momentum gained through the approval of 37 projects without competitive bidding was lost when they were canceled. Do you agree?

Those 37 projects could have significantly expanded the

renewable energy sector. I believe the government should compare the tariffs from the new tenders for 52 projects, and then re-negotiate the postponed ones with revised tariffs in comparison with the solicited projects. This would help restore investor confidence.

Many of the LOI (Letter of Intent) holders had already invested in land and other preparations. Reviewing and possibly reinstating these projects can bring back the momentum.

Although tenders were invited for 52 new projects, the response was not encouraging. It's said that without an Implementation Agreement (IA), banks are unwilling to finance. What is your take?

Yes, tenders were floated without implementation agreements, meaning no payment guarantees. Moreover, the terms initially allowed cancellation at any time. Later, it was modified so that cancellation is allowed after 10 years. But that still creates challenges for the financiers. Considering the low plant factor of the RE projects (especially solar), they need longer-term concessionary financing (usually 15 years). The investor, as well as the financiers, will be compelled to develop financial models with all debt service returns occurring within 10 years, which can hinder the objective of reducing the tariffs.

Out of the 41 closed tenders, 70 proposals were received. Four locations got no bids, and 19 projects had only a single bidder. Very few foreign investors participated. Without payment guarantees, it is challenging to get financing for these projects, and tariff rates may turn out to be higher than expected.

There's significant potential for rooftop solar in the industrial sector. Some believe that up to 5,000 MW could be installed by 2030 with the right policies. What's your view?

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I haven't come across any comprehensive study on this, but partial data suggests that 5,000 MW from industrial rooftops is achievable. One major obstacle is the lack of interest from the utilities, as rooftop solar reduces their electricity sales.

A solution would be to include a provision in the net metering policy for utilities to receive some incentives.

Also, under the current net metering policy, only 70% of the sanctioned load can be installed. Increasing this to 100% or more would encourage industries to adopt rooftop solar.

In the Economic Zones (EZs) and Export Processing Zones (EPZs), industries are discouraged from installing rooftop solar PV systems under net metering guidelines since the authorities buy electricity from the utilities and resell it to the industries inside the zones.

Investment is not a big issue in this space as projects can be implemented either through self-financing or via ESCO (Energy Service Company) models.

Merchant Power Policy and Corporate Power Purchase Agreements are at their final stage of approval. Under these policies, initiatives have been taken to establish solar projects. Pran Group and A.K. Khan Group have already signed MOUs in this regard. How do you assess the future of such initiatives?

These initiatives are appreciable and mark the beginning of a new era in the expansion of the renewable energy sector. Due to green compliance requirements in the industrial sector, companies will now produce solar power at various installations and use it within their own energy portfolios. The government must provide all forms of support to facilitate this transition.

We know that buyers in the textile sector have imposed renewable energy use targets for their manufacturers by 2030. As a result, under these proposed policies, producing electricity either independently or via third parties is not optional—it's essential.

Therefore, the government should expedite the finalization of the Merchant Power Policy and the Corporate Power Purchase Agreement. This will provide fresh momentum to the expansion of renewable energy.

The government has launched a National Rooftop Solar Program. Under this program, the Chief Adviser of the interim government has ordered coordinated action for solar installation on all government rooftops. How do you evaluate this initiative?

Although delayed, this is a commendable move at the national level. One must remember that the biggest barrier to renewable energy expansion is the mindset. Now that this directive has come from the head of the government, the installation of rooftop solar on

government buildings will gain significant momentum.

In my view, if a coordinated policy is implemented and EPC (Engineering, Procurement, and Construction) is finalized through a single point of authority, it's certainly possible to install 1,000 MW of solar capacity on government buildings in a year.

Moreover, if private investors are allowed to invest in government building clusters across the country, even greater success will follow.

Solar energy is being called a "one-dimensional opportunity" in Bangladesh. Meanwhile, a 60 MW wind power project is currently operational, and they are interested in further expansion. Some other companies have signed MOUs with the government for wind feasibility studies. How do you view this?

Recently, I was involved in a study on offshore wind energy potential. There is scope for both onshore and offshore wind projects in the southern parts of Bangladesh. However, in my assessment, wind energy is more expensive than solar, since the wind potential is moderate, and the cost of wind technology is higher than solar technology.

To make wind energy projects financially viable, offshore clusters of at least 500 MW capacity need to be developed. However, in areas with wind potential, grid access and capacity for evacuation are currently very limited. The government must take proactive steps to expand the grid in those regions.

What percentage of variable renewable energy can Bangladesh's current grid infrastructure support? ADB and other donors have recommended installing storage for at least 20% of RE capacity. Do you think Bangladesh should begin working on storage now?

With the current state of our grid infrastructure, up to 20% renewable energy integration is possible. To go beyond that, grid flexibility needs to be enhanced, and for that, storage is essential.

Additionally, power plants need to operate in FGMO (Free Governor Mode of Operation), which many already support but don't use. This should be activated. Moving forward, new solar projects should also include mandatory storage components to limit their generation ramps within certain limits.

Moreover, regional grid connectivity can significantly improve grid flexibility. Whether we want it or not, Bangladesh will eventually have to integrate into regional grids. Europe has succeeded in high renewable integration largely due to its single-grid system. Bangladesh should aim to have and connect to the South Asian and the ASEAN grid.

Many believe renewable energy expansion is not possible under a centralized grid system. They argue for a shift to distributed energy systems. What is your take?

That's absolutely right. Relying on centralized power generation will not allow for broad-scale renewable energy deployment. We must gradually move towards establishing renewable infrastructure close to demand centers. Therefore, the power system must become more compatible with distributed renewable generation.

Many suggest that to make renewable energy more affordable and scalable, the government should prepare land and evacuation facilities first before seeking investment. This could significantly reduce renewable energy costs. What do you think?

There's no alternative to this. In 2019, I worked on developing the Solar Roadmap with UNDP funding. That roadmap recommended establishing 13 solar hubs across the country.

Look at India—they're getting solar electricity at 3 to 4 cents per unit because they ensure land and evacuation facilities before seeking investment. Bangladesh can follow the same path. If we do, we can achieve solar prices below 6 cents per unit.

World Bank studies have already identified 20,000 acres of land in Jamalpur. The government should promptly develop the land and install transmission infrastructure, then call for investment proposals from developers.

IDCOL is initiating a project to install 3–5 kW solar rooftop systems. How do you view this initiative?

The Solar Home System program of IDCOL is one of Bangladesh's great success stories, widely recognized globally. Now, IDCOL is launching a new phase of higher-capacity solar home systems under NEM guidelines, which is a very promising step.

I believe it will be highly successful. It's important to note that Grameen Shakti was IDCOL's most successful partner for the success of the SHS program. Interestingly, the visionary behind that initiative is now the Chief Adviser of the interim government, and IDCOL's first CEO is now the Power & Energy Adviser.

Under their leadership, I believe IDCOL's new program will usher in a new chapter in Bangladesh's solar energy development. EP