FOURTH RECOMMENDATIONS FOR THE DRAFT OF POWER DEVELOPMENT PLAN VIII

Hanoi, September 13th,2021

Following the recommendations from the previous 3 times, the Vietnam Sustainable Energy Alliance (VSEA) would like to send you our 4th Recommendation for comments on the draft Report of the Ministry of Industry and Trade and the draft Decision of the Prime Minister approving the national power development plan for the period of 2021-2030, with a vision to 2045 (PDP VIII).

We hope that these comments from experts will be considered and used by research agencies in the process of commenting on the draft PDP VIII.

In the process of following the development and adjustment of PDP VIII recently, we noticed the planning process attracted the attention of society. The draft PDP VIII was carefully prepared with many consultations, explanations and revisions, so as of now, here are the new differences compared to the March 2021 submission:

1. Reducing total power capacity in both phases of the planning period;

2. Strengthening control and monitoring the implementation of the Plan;

3. Expressing the views and prioritizing goals for the development of renewable energy, especially distributed renewable energy sources;

4. Maximizing region's demand self-balance to minimize long-distance grid transmission.

However, **the major problems** that experts, scientists, investors and the public are particularly concerned with, which have been gathered and commented on by VSEA in the past 3 times, **have yet to be resolved**. Even this draft shows **"backward steps" when increasing about 3.000 MW of coal power and reducing about 8.000 MW of renewable energy by 2030,** while the roadmap for "retail energy market" is unclear, the resource arrangement to implement the Plan, especially the investment capital, is unconvincing**.** The draft even partly goes against the main perspective identified in Resolution 55/NQ-TW dated February 11, 2020 of the Politburo on Vietnam's national energy development strategy to 2030, with a vision to year 2045: *"Quickly build a synchronous, competitive, transparent energy market, diversify forms of ownership and business methods; apply market prices to all types of energy. To encourage and create all favorable conditions for all economic sectors, especially the private sector, to participate in energy development; eliminate all types and forms of subsidies, monopolies, unequal competition, lack of transparency in the energy industry"*

The concentration on keeping these traditional power sources for the current grid only aims to ensure the stability of the power system, but it loses the opportunity to catch up and

integrate, creating momentum for an advanced energy economy and a green national development.

VSEA wants to express insistence with the previous comments, and continues to make recommendations in accordance with the actual situation and new development requirements. The contents of the IV's comments on the draft PDP VIII are as follows:

1. **Power Development Plan VIII should be consistent with the path of renewable energy development, to avoid being hindered by recent obstacles.** Instead of greatly reducing clean electricity from renewable energy, increasing the risk of pollution and its many consequences by using coal power it is necessary to prioritize policies to create an ecosystem for sustainable renewable energy development with increasingly competitive costs. Only when there is a "clear retail electricity roadmap" with synchronous mechanisms and policies, will this new industry in Vietnam can develop, modern technology gets applied, domestic enterprises can provide more services from design, construction, transportation, operation, maintenance, etc., and have important contributions to the national energy security strategy.

2. **Coal power projects that have low feasibility, are not supported by localities and have difficulty in financing (equivalent to about 16,400 MW) need to be carefully reviewed and alternative options should be prepared.** The alternatives that we propose include: Floating solar power combines with existing hydroelectric plants, accelerate potential of wind power, distributed solar power, develop a combined model " dual benefits – dual use" of solar power, wind power with agriculture and fisheries in combination with implementing programs of cleaner production, economical and efficient use of energy sources.

3. **In order to facilitate efficient utilization of renewable energy sources, PDP VIII should introduce solutions to encourage the private sector to invest in the power grid and immediately consider researching and applying solutions for storage batteries that do not harm the environment.** Storage technology is getting cheaper and cheaper, it is necessary to have favorable policies combined with grasping the world's advanced technologies so that the combination of renewable energy and storage at large, medium and small scales can participate in future operation of the electricity industry.

4. The draft PDP VIII needs to continue to clarify two key issues to ensure its feasibility when implementing: (1) Allocation of capital sources and basic orientation of investment capital divergence to implement the Plan (2) Road map towards a "retail electricity market" according to Resolution 55-NQ/TW and the roadmap with progress tracker of completing the national and regional power transmission network to implement the Plan.

Basis for recommendations based on judgments and analysis:

1. Structure of power source to increase coal-fired power, reduce renewable energy compared to the draft in Report 1682. This is contrary to the goals, views and explanations of the Draft and does not follow the Resolution 55-NQ/TW, international commitments, statements of senior leaders of the State, the general direction of trends in the world to shift sustainable energy from "brown" to "green and clean energy" and the fact that the great potential of renewable energy sources needs to be invested and utilized.

Throughout the Report and the Draft Decision, the views, goals, and development orientations for power generation emphasized "reducing coal power, prioritizing, promoting utilization and maximize usage of renewable energy sources for electricity production", "developing distributed power sources", "prioritizing the development of rooftop solar power and floating solar power". However, the structure and expected development of power sources do not reflect that.

In comparison with the previous Draft in Report No. 1682/TTr-BCT dated March 26, 2021, the total installed capacity of the whole system will decrease by 7688 MW in 2030 and 15046 MW in 2045, but the reduction in capacity is mainly occurs with renewables while increasing coal power capacity. Specificly:

	Capacity difference compared to Report No. 1682/TTr-BCT in 2030	Capacity difference compared to Report No. 1682/TTr-BCT in 2045
Coal-fired power	Increase 3076 MW	Increase 531 MW
Renewable energy	Decrease 8170 MW	Decrease 16110 MW

In addition, this Draft has increased hydropower capacity (2030: 612 MW, 2045: 3305 MW) to compensate for the decrease in wind, solar, and biomass power, thereby increasing its compliance with the target of Resolution 55-NQ/TW). However, only the target of 2030 is reached, the sharp reduction in renewable energy capacity by 2045 makes the total renewable energy of the whole energy sector in the basic scenario only 71.2 TOE, lower than the target of lower bound in Resolution 55-NQ/TW (76 TOE).

In the power source capacity structure in 2030 and 2045, unlike the previous plans, this time the ratio of power sources is based on a range of lower and upper bounds instead of a specific number. However, the detailed capacity table of different sources shows that for coal power, the upper bound is selected (31.2%), while with renewable energy, the lower bound is used (24.3%).

During the 10 main years of the Power Development Plan VIII (2021-2030), the renewable energy capacity developed is mainly the approved capacity added to the revised Power Plan VII, with almost no new projects being approved in the next 10 years. The details are as following:

	Approved capacity added to revised PDP VII – 2030 (MW)	Capacity in Draft PDP VIII – 2030 (MW)	Difference between PDP VIII and the revised PDP VII
Wind power	11860	11820	-40

Solar power (including rooftops)	23155	18640	-4515

The above table shows that RE development target of the Draft PDP VIII is lower than the the approved capacity added to the revised PDP VII.

2. Draft Power Development Plan VIII has not properly recognized the role of renewable energy sources, so effective solutions have not been proposed to utilize this non-material costs energy source.

The assessment of the current state of national power development of the Report states that "while renewable energy sources have a total installed capacity of about 17369 MW (accounting for 25% of the installed capacity of the system) but only about 4.63% of the total electricity produced in the whole system". This way of phrasing can cause a negative perception of renewable energy. It should be recognized with fairness that because the grid system cannot meet the requirements, renewable energy sources must reduce their capacity, resulting in power output that is not efficient of the generated power. In addition, the current reduction is due to the fact that the power and grid planning was not properly calculated in the previous period.

Meanwhile, the benefits of job creation when developing renewable energy have not been evaluated in the Draft Plan. According to recent research results, if developing renewable energy, it will create twice as many jobs on the same capacity number compared to coal power.[1] Creating jobs for people during the post-pandemic recovery is an urgent issue. If we continue to promote the development of renewable energy, especially distributed sources solutions, it can contribute to creating more jobs in the locality and limiting migration.

Suppressing the development of renewable energy in the near future is an easy solution for power grid system operators, but it is not the most optimal solution because:

First, with the rapid improvement of technology in the recent time, solar power in Vietnam has been able to compete with the cost of coal power production by 2021, while wind power is forecasted to being able to compete with new coal power in 2025.[2]

Second, the current concerns about the 6-7 hours of solar power generation during the day causing local overload of the grid will be overcome if groups of solutions are simultaneously applied:

- Sell electricity on site (DPPA) to factories (large consumers) where electricity is produced
- Apply (Smart) grid technology in management and operation
- Upgrading the power grid
- Let the private sector participate in the construction of the power grid as mentioned in Resolution 55 TW
- Organize transparent public biddings to choose solar power investors

[1] 2019, GreenID worked with Institute of Advanced Sustainability Solutions (IASS) to conduct the research *Skills and potential for future job creation from renewable energy in Vietnam, (COBENIFIT 2019)*
[2] Bloomberg New Energy Finance, 1H 2021 Levelized Cost Of Electricity report.

- Build a roadmap to apply new technology, switch from current solar panel power technology to thermoelectric solar power, allowing electricity generation 24/24.
- Developing distributed solar power sources, serving the demand for on-site self-use.
- Develop solutions that combined RE sources: for example, floating solar power combined with hydroelectricity, wind power combined with solar power…
- Promote integrated solutions between RE sources and other fields such as RE combined with agriculture[3], transportation
- Research low-cost and low-environmental impact energy storage devices

The remarkable development of storage technology in recent years is the solution to the problem of unstable renewable energy. According to NREL, the price of storage batteries decreased very quickly, it has decreased by about 80% from 2010 to 2020. The current price of battery storage is between 10.8 to 14 cents/kWh[4], cheaper than hydroelectricity storage, about 20 cents/kWh. It is forecasted that by 2030, the cost will be reduced by 55% and by 2050, the price will be about 40% comparing to current level[5]. Currently, the Draft does not consider this technology in the period of 2021-2030, and will include a small number after 2030. This will make Vietnam lag behind the world in renewable energy development.

Third, the post-project environmental treatment is not a concern because scientists have calculated that most of the materials of the current "battery" panels can be recycled, unlike ordinary batteries which cause pollution because their lead content is too large. Solar panels do not have this component. However, to ensure sustainable development, the State needs to research to have an appropriate policy and mechanism related to the collection and treatment of waste from solar panels now. From a circular economy perspective, this can become an opportunity for Vietnam to develop the photovoltaic panel recycling industry in the future.[6] Taking advantage of available resources will help us proactively develop the economy and reduce our dependence on electricity imports.

3. The Draft still bets on coal power within the main 10 years of the plan (2021-2030), and continues to extend this development into the period 2035-2045. This is an option that contains many risks and is not feasible.

In the 10 main years of the master plan (2021-2030), coal-fired power will continue to increase greatly, about 22,000 MW from now to 2030, bringing the total coal power capacity in 2030 to nearly double the existing level in 2020. In the period of 2030 - 2045, coal power is expected to increase by about 8000 MW. We believe that the feasibility of these projects should

[3] Pilot model combining solar power with clean agricultural production in An Giang: https://www.youtube.com/watch?v=M4hkgnd4Kt8&t=2s
[4] Utility-scale battaries. Innovation lanscape brief. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Sep/IRENA_Utility-scale-batteries_2019.pdf
[5] IRENA. Cost Projections for Utility-Scale Battery Storage: 2020 Update

[6] GreenID. Manage and recycle solar panels at the end of their cycle. http://greenidvietnam.org.vn/quan-ly-va-tai-che-tam-pin-mat-troi-khi-het-han-su-dung.html

be re-evaluated based on **the actual accessibility of capital, the past development of these projects and the recent major changes in the coal industry.**

In VSEA's 3rd recommendation letter to the Ministry of Industry and Trade (31/05/2021), we pointed out that South Korea[7] and Japan[8], two of the remaining three countries investing in coal-fired power in Vietnam have officially announced to stop funding new coal power projects.[9] Most recently, on July 15, 2021, China's Ministry of Commerce and Ministry of Ecology and Environment issued the Guidelines on green investment in China's international investment and cooperation. In particular, the general requirements highlighted China's new development philosophy in the coming time, which is *"strictly protecting the ecological environment, and effectively controlling carbon emissions, thereby demonstrating the role of China's green leadership, building a cleaner and more beautiful world, as well as serving to create a new development model."* One of the contents of the main task is to encourage Chinese businesses to turn green investments abroad, especially to support enterprises to invest in the field of renewable energy. Thus, the three major financial sources for coal power in Vietnam have all closed. The big question is which financial source will Vietnam access to develop coal power?

If assessing the feasibility of the project from the perspective of access to capital, it is necessary to clearly classify 30000 MW of coal power expected to develop from now to 2045 into the following groups:

	Number of projects	Capacity (MW)	Expected operational period
Funding has been arranged and under construction	10	About 10800	2021-2025
Signed BOT contract but haven't arranged capital yet	2	About 3200	2025-2030
In the negotiation stage, not signed and not yet mobilized capital	15	About 16400	2026 -2030 và 2030 - 2035

From the changes as analyzed above, we believe that 16,400 MW of coal power is in the negotiation stage, not yet signed, it will not be feasible to access capital. We recommend removing 14 projects from the Power Plan VIII.

[7] The President of South Korea announced the suspension of financing for coal power projects at the Climate Summit:South Korea ends aid for coal plants overseas - France 24
[8] https://www.reuters.com/business/energy/g7-countries-agree-stop-funding-coal-fired-power-2021-05-21/
[9] The declaration was made during two important international events, the Climate Summit on April 22 and the G7 Climate and Environment Ministerial Meeting on May 21.

The project group which signed BOT contracts but has not yet arranged capital, including 2 projects, which are expected to be put into operation in the period 2025-2030. This project group has the risk of continuing to be behind schedule compared to the time given in the plan.

In the 30000 MW coal-fired power is expected to develop from now to 2045, most of it has been included in the Power Development Plan VII, but implementation has been slow, so it has pushed back the operation time in the revised Power Plan VII, and now it continues to be pushed back operating time in the PDP VIII. Our statistics on this situation are as follows:

Progress of coal power capacity in PDP VIII compared to PDP VII	**Project (capacity)**
Keep same progress	2 projects (about 3200 MW)
5 years behind schedule	5 projects (about 6300 MW)
5-10 years behind scedule	12 projects (about 15800 MW)
More than 10 years behind schedule	2 projects (about 2000 MW)
Supplement to the revised PDP VII and PDP VIII	4 projects (about 3000 MW)

The status of projects being delayed from one plan to another like this is a waste of local resources, and inhibits the economic development of people, causing many frustrations in people's lives. If unfeasible projects continue to be included in the planning without access to capital, it will not only affect energy security but also delay the socio-economic development of the locality as well as the whole country.

In addition, the fluctuation of coal prices in recent years warns of great risks and economic consequences if coal power continues to develop. Coal prices are currently forecasted in the draft as follows:

Unit: USD/ton

2020	2025	2030	2035	2040	2045
70.0	75.0	75.0	80.0	81.0	82.0

In fact, the price of coal in the first 6 months of 2020 was 98.8 USD/ton, in this year it has increased to 159.7 USD/ton, which means an increase of 150%,[10] 100 times more than the forecast rate of PDP VIII. With a coal price of 80USD/ton, levelized cost of electricity (LCOE) is estimated at 6 UScent/kWh to 7 UScent/kWh. With coal prices increase to 150 to 160 USD/ton currently, LCOE becomes 10 to 11 UScent/kWh, more expensive than off-shore wind power under FIT which is 9,8 UScent/kWh. If external costs are included (health and environmental costs) coal power price may increase further 5 UScent/kWh, equivalent to 15-

[10] https://thanhnien.vn/tai-chinh-kinh-doanh/gia-than-va-dau-tang-evn-keu-chi-phi-mua-dien-doi-hon-16600-ti-dong-1439273.html

16UScent/kWh. Thus, the price of coal power is not cheap, but on the contrary, it is the most expensive and more expensive than all types of renewable energy under the FIT price. When coal power output accounts for nearly 50% of the total output of the power system, the recent upward trend in prices will create great pressure on the electricity industry and increase electricity prices.

4. The draft does not reflect the aspirations of stakeholders including people, local authorities, businesses, independent scientific organizations, development partners…

Prioritizing the development of renewable energy, not developing more new coal power is the aspiration of people and authorities in many localities. In pas time, many provinces such as Thua Thien Hue, Bac Lieu, Long An, Tien Giang, Nghe An, Ha Tinh, Hai Phong, Quang Ninh has clearly shown disapproval of coal power. However, thermal power projects in Nghe An and Ha Tinh are still included in this Draft plan.

For businesses, the incentive mechanism has helped the solar power market in Vietnam grow from zero to about 17,000MW within 2 years. However, with the current Draft, the solar power industry in Vietnam, which recently flourished, will immediately be put to a halt. The plan to develop only 2000 MW of solar power in the next 10 years (equivalent to 200MW/year) will narrow the market, causing a series of Vietnamese private enterprises in this field to go under. Which private enterprise can afford to wait to reinvest in solar power 10 years from now?

Independent scientific organizations and many development partners have made efforts to contribute knowledge and resources to support Vietnam to develop renewable energy, stop developing new coal power. But the current Draft clearly shows that Vietnam will continue to build new coal power until 2035, while many countries are rapidly transitioning to low carbon emissions. For example, Indonesia, despite being a coal exporter, has pledged not to build new coal power plants after 2023.

Continuing to develop more coal power means increasing risks and dangers to public health because this is a source of electricity that emits air pollutants that are harmful to human health. Many studies have shown a close association between air pollution and an increased risk of death of patients with Covid-19.[11]

Above are some of our comments and suggestions for the Draft Power Development Plan VIII. We hope that these comments will be useful and are considered by the decision-making agencies impartially so that the approved Master Plan reflects the aspirations of the people and meets the requirements of "developing mechanisms, breakthrough policies to encourage and promote strongly the development of renewable energy sources in order to maximally replace fossil energy sources" stated in Resolution 55-NQ/TW as well as the recent statement of the Chairman of the National Assembly Vuong Dinh Hue during his visit and working session with the European Parliament and the Kingdom of Belgium on September 9, 2021.

[11] Quoc Ba Tran, Nguyen Thi Kim Oanh, Manupat Lohitnavyd, Su Shiung Lam, Tanapon Phenrat, Quyet Van Le. Correlations between air pollutant levels and Covid-19 rates: a systematic review. 2021.

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