



STRATEGIC ORIENTATION FOR RENEWABLE ENERGY TRANSITION TOWARD SUSTAINABLE AGRICULTURAL DEVELOPMENT IN THE MEKONG DELTA

1. Promoting In-Depth Policy Dialogue in Agriculture and Agribusiness

This policy brief is an outcome of the stakeholder meeting held on August 6, 2025, in the Mekong Delta, organized under the Alterno–ASSIST Partnership, supported by P4G and the P4G National Platform, and co-hosted by Mekong Institute, Can Tho University. The event convened more than 100 participants from research institutes, government agencies, businesses, cooperatives, and international organizations, forming a cross-sectoral forum to exchange insights on renewable energy policies in agriculture. Its objective was to foster in-depth policy dialogue, identify barriers, and explore solutions to accelerate green energy adoption in agriculture—ultimately contributing to a net-zero and sustainable future for the region.

In the group roundtable discussions, experts and businesses examined the current barriers hindering the implementation of policies, regulations, and technical limitations in adopting green energy transition solutions. A number of issues were raised, including the lack of close coordination among stakeholders, the absence of coherent and enabling policies and mechanisms, the small scale of applications, and limited engagement with local enterprises and communities. The discussions further contextualized these challenges at the level of specific localities in the Vietnamese Mekong Delta, while also highlighting the region's advantages: favorable natural conditions, strong political momentum from the Party and State, human capital, and market-driven incentives to foster green transition. To ensure an effective and sustainable transition, delegates emphasized the need to design flexible policies tailored to different stakeholder groups, strengthen communication, and implement pilot models to gather practical feedback—thereby refining policies based on grassroots experience.

Particularly, the importance of multi-stakeholder collaboration was underscored. Many agreed on the necessity of the "four-house" model—government, scientists, businesses, and



farmers—working in close cooperation to overcome challenges and unlock the potential of renewable energy in agriculture. The meeting reached strong consensus: stakeholders committed to tighter collaboration, mobilizing financial and technical resources, and establishing a continuous dialogue platform. The event served as a clear expression of determination and partnership among stakeholders, aligning concrete actions to promote energy transition and sustainable agricultural development.

2. Practical Policy Recommendations and Innovative Clean Technologies for Sustainable Agriculture

The plenary discussions captured numerous practical recommendations from stakeholders while also introducing innovative technological solutions for the renewable energy transition, reaffirming the potential of renewable energy in reducing emissions and enhancing the sustainability of the agricultural sector in the Vietnamese Mekong Delta.

2.1 Stakeholder Policy Recommendations

Practical proposals were presented and discussed to gradually address challenges and promote the adoption of renewable energy in agriculture in the Vietnamese Mekong Delta:

- Pilot local green energy models: Each province to select a pilot site for renewable-powered agriculture, creating a ripple effect through real-world success stories.
- Strengthening links between scientists, businesses, and farmers: Bridge the gap between research and practice through long-term collaborations, ensuring research outcomes are effectively applied in production.
- Ensuring economic benefits for farmers: Policies and green projects must yield tangible economic benefits (e.g., cost savings, increased income) to gain farmer buy-in and active participation.
- Establishing alliances and action plans: Propose forming a strong alliance between businesses, VCCI, local governments, and cooperatives to support clean energy projects. Research institutes are encouraged to announce specific action plans to provide technical and informational support to enterprises and farmers.



In addition, recommendations on improving the legal framework were also highlighted, such as recognizing carbon credits as financial assets to create market incentives for emission reductions and establishing a National Steering Committee on the carbon market as well as a Green Transition Fund to mobilize resources for clean energy initiatives. Overall, these recommendations are highly feasible, closely aligned with practical needs, and require the engagement of both the policy system and the business and farming communities.

2.2 Innovative Technological Solutions for Advancing Green Transition

A highlight of the meeting was the presentation of various innovative clean energy solutions demonstrating how renewables can effectively reduce agricultural emissions and foster sustainability. Key technologies included:

- **Agro-PV Model (Agriculture Combined with Solar Power):** Application of solar panel systems on farms (e.g., shrimp farming combined with rooftop solar systems above ponds), which helps reduce electricity costs for production facilities by 30–40%. This integrated approach generates clean energy while making use of pond space, lowering operating costs, and increasing farmers' economic efficiency.
- **Solar Power for Irrigation and Agricultural Storage:** Installation of solar power systems for water pumps and cold storage in off-grid areas enables farmers to secure electricity supply and better preserve agricultural products without relying on the national grid. This solution is particularly beneficial in remote areas, enhancing autonomy and resilience in agricultural production.
- **Biomass Power from Agricultural Residues:** Development of biomass power plants using agricultural byproducts (straw, husks, livestock waste, etc.). For example, a 20 MW biomass power plant project in Hau Giang has been planned, with an expected capacity of 130 million kWh/year. Biomass energy not only reduces open burning and associated pollution but also provides additional income for farmers selling byproducts, while lowering emissions compared to fossil fuels.
- **Hybrid Thermal Battery ("Sand Battery"):** An energy storage solution using sand and molten salt, introduced by the startup Alternō. The system stores surplus electricity (from



solar or low-cost daytime power) as heat, which can be used for drying crops at night without grid power, zero emissions, minimal maintenance, and a lifespan of ~15 years. Pilots in Lam Dong, Dak Lak, and Tra Vinh have shown up to 70% reduction in drying costs while improving quality and extending shelf life of crops. This solution offers a new pathway to tackle electricity shortages and high energy costs in rural areas by maximizing solar energy use.

- **Alternō E Power Storage System:** Also developed by Alternō, this storage system provides electricity for water pumps, lighting, and equipment operation in off-grid farms. It ensures continuity of essential farm operations at night or during outages, demonstrating that renewable energy can effectively support all stages of agricultural production.
- **Rooftop Solar with PPA Model:** Stride introduced a rooftop solar solution for agribusinesses with flexible investment options. Companies can either invest directly or collaborate under a Power Purchase Agreement (PPA), where Stride covers 100% of installation costs and businesses only pay for electricity at a rate lower than the grid. This model helps agricultural processors save billions of VND over 20 years while complying with ESG standards and meeting emission requirements for export markets. Stride also highlighted the potential of solar energy in smart irrigation systems, increasing farmers' profitability while cutting agricultural emissions.
- **Real Investment Returns of Renewable-Powered Farms:** A representative of an agribusiness (AHA Company) shared a success story of installing a 100 kW solar system (~300 million VND investment) for their 70-hectare farm. In the first month, electricity costs dropped from 40 million to just 5 million VND (nearly 80% savings). The solar system ensures stable operations for irrigation, drying, and lighting, reducing dependence on the grid and enhancing competitiveness. This case demonstrates that investing in renewable energy is a smart agricultural strategy, delivering clear economic benefits while advancing sustainability goals.
- **Future Technology Directions:** In addition to existing solutions, the meeting also discussed promising emerging technologies such as carbon capture and green hydrogen.



These long-term directions aim to further reduce agricultural emissions and create new opportunities for Vietnamese agribusinesses. Although still in early stages, these technologies signal Vietnam's efforts to align with global trends toward a low-emission, sustainable agricultural future.

The stakeholder meeting achieved two key outcomes: first, the establishment of an action alliance that integrates regular policy dialogue forums to connect stakeholders and advance joint commitments toward renewable energy transition in agriculture in the Vietnamese Mekong Delta; second, the consolidation of practical recommendations and the introduction of innovative, high-potential clean technology solutions. These outcomes reaffirm the role of renewable energy as a core driver in enabling Vietnam's agriculture to reduce emissions, adapt to climate change, and move toward sustainable development in the future.