Executive Summary: Agrivoltaics in Israel: Current Status and Recommendations

The NZO Project

Background

Israel faces the dual challenge of reducing greenhouse gas emissions while ensuring food security for its rapidly growing population. With limited land resources and a Mediterranean climate prone to extreme heat and water scarcity, agrivoltaics (APV) presents a promising solution. By integrating solar energy production with agriculture, APV offers dual land use, mitigating land scarcity while enhancing rural resilience. Despite its potential, Israel's APV sector remains nascent, with limited pilot projects, regulatory uncertainty, and high investment costs compared to conventional PV.

Summary of Current Status

As of December 2024, Israel has initiated pilot projects and regulatory reforms to explore agrivoltaics, yet full-scale deployment is hindered by institutional and economic barriers:

Regulation and Planning: Several statutory planning initiatives (e.g., TAMA 15/D/10 and TAMA 24/1 amendments) have sought to enable APV deployment, but bureaucratic delays and lack of clear implementation pathways have slowed progress. Pilot projects involving over 140 sites were approved, yet many face challenges in securing permits and grid connections.

Pilot Projects: A handful of pilot installations are active in kibbutzim and research centers, testing crops such as avocados, grapes, and vegetables. These pilots examine crop yields, water efficiency, and microclimate benefits, but delays in data collection limit broad conclusions.

Land Authority (ILA) Policy: In 2022, the Israel Land Authority allocated a quota of 500 dunams for APV projects, later expanded with additional land allocations. Contracts ensure continued agricultural use but impose strict conditions on scale, crop types, and oversight mechanisms.

Electricity Market Policy: APV systems up to 630 kW are eligible for tariffs, but financial viability remains low compared to ground-mounted PV. Regulatory updates in 2024 extended tariff validity, and discussions on hybrid storage integration are underway. **Food Security Considerations**: The Ministry of Agriculture, along with inter-ministerial teams, has emphasized strict monitoring to ensure at least 70% of agricultural output is maintained in APV sites.

Conclusions and Recommendations for Israel

Agrivoltaics in Israel holds significant potential but requires coordinated regulatory, financial, and research support to overcome existing barriers. Key recommendations include:

- Develop a clear national APV framework that streamlines planning, permitting, and grid connection processes.
- Introduce dedicated financial incentives (higher tariffs, grants, or tax benefits) to offset high capital and operational costs compared to conventional PV.
- Strengthen agricultural safeguards by requiring minimum productivity thresholds, continuous monitoring, and penalties for non-compliance, ensuring APV enhances rather than undermines food security.
- Expand R&D and long-term pilot programs to generate robust agronomic, economic, and environmental data under Israel's diverse climate zones.
- Foster collaboration among farmers, energy developers, research institutions, and government ministries to scale APV while supporting rural development and resilience.
- Invest in upgrading grid infrastructure, particularly in peripheral regions, to accommodate APV expansion.