Solar Irrigation Solutions: Opportunities and Challenges

Divyam Nagpal, IRENA
IRENA’S WORK ON THE WATER, ENERGY AND FOOD NEXUS

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WHY SOLAR IRRIGATION SOLUTIONS?

**Farmers**
- Reliable energy (and water) supply
- Improved yields and food security
- Increased incomes
- Climate resilience
- Additional benefits for health, education and poverty alleviation

**Local/national governments**
- Reduction in electricity and fuel use
- Reduced fuel imports
- Potential subsidy savings
- Increased agricultural output and associated development outcomes
- Emissions reduction
Policy landscape for solar irrigation varies significantly between markets

- Government influence on sector development (e.g., India, Nepal)
- Government/DFI influence (e.g., Bangladesh)
- Private sector-driven approaches (e.g., Kenya)
- NGO/development organisations/humanitarian settings
ENABLING ECOSYSTEM

Policies and regulations

Capacity building

Technology

Institutional frameworks

Cross sector-linkages

Delivery and financing models

Accelerating off-grid renewable energy

Gender

Multi-stakeholder partnerships

Source: IRENA
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<tr>
<th>POLICY/PROGRAMME DESIGN CONSIDERATIONS</th>
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<tr>
<td>Foster innovation and flexibility in the delivery of solar irrigation solutions</td>
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<td>Focus on after-sales support and (cross-sector) capacity building</td>
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<td>Assess the direct and indirect impacts on water resources</td>
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<td>Consider the influence of availability and cost of energy on farmer behaviour</td>
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<td>When designing financial instruments account for target groups and sustainability</td>
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<td>Package energy and water-efficient solutions</td>
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<td>Monitor performance and gather data</td>
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<td>Adopt an integrated approach to programme design</td>
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Thank you!