

Key decisions in energy sector plans and key issues in associated SEAs for energy plans

ENERGY PLANNING: national energy authority / authorities in the lead		
Type of plan	Key decisions	Key issues in SEA
INTERNATIONAL		
Energy networks 1. e.g., <i>African Power Pools (West, East, and Southern)</i> 2. ...	- Energy security: diversification to reduce single source dependency; minimizing geopolitical risks or supply disruptions. - Enhancing the resilience of energy infrastructure against natural disasters, cyberattacks, and other threats. - Renewable energy integration to reduce fossil fuels and enhance energy stability. - Reliable and affordable energy to all, particularly in developing regions with a lack of basic energy services. - Leveraging energy projects to create jobs and stimulate economic growth. - Developing and enforcing joint standards and regulations - Strategies for engaging the private sector	- Energy infrastructure alternatives; - Maximise renewable in energy mix; reduce perverse incentives for carbon-based energy. - Governance arrangements/international coordination for environmental monitoring and management - Ensure benefits for all segments of society - Promote sustainable practices and mitigate environmental degradation - Assessing and addressing risks related to geopolitical instability, natural disasters, and climate change - Alignment with other sector plans - Need for revision, updating, or strengthening of laws and regulations - Measures to rehabilitate areas affected by phasing out coal (mines and energy facilities); - Cumulative effects with other sector plans
NATIONAL		
National energy plan <i>Vietnam SEA for Power Development Plan (Annex 28)</i> <i>Netherlands Regional Energy Strategies (Annex 29)</i>	- Energy mix: ambition/targets for renewables (NDC); role of transition fuels; balance domestic/imported energy - Infrastructure: transmission and distribution; centralized or decentralized energy systems; smart grid technology and grid resilience; storage solutions - Regulations: emissions limits; incentives and subsidies; market reforms; role of the private sector - Energy efficiency standards for buildings, transportation, and industry.	- Energy demand under climate scenarios - GHG emission reduction (NDC targets) - Air and water pollution/health effects: cleaner technologies and regulation - Water scarcity/reliability (hydrogen production, run-of-the river hydropower, cooling). - Land use, habitat destruction, forced displacement - Resource depletion - Energy access and equity (avoid energy poverty) - Environmental injustice and health disparities. - Long-term costs and benefits of energy alternatives

	• Technology development: hydrogen, carbon capture and storage, new energy solutions • Phasing out fossils	
Hydropower plan <i>Quang Nam Hydropower Plan, Vietnam (Annex 30)</i> <i>Pakistan Jammu & Kashmir hydropower (Annex 31)</i>	• Type and location of HP facilities • Grid integration: stability and peak load management, stored HP • Multi-purpose use (irrigation, flood control, public water supply, recreation) • Policy alignment with national energy policies, development goals, and sustainability targets. • Comply with international regulations on water rights, environment, and land use.	• Climate vulnerability (floods; underperformance) • Portion of river basin(s) to remain free flowing/guarantees for migratory animals • Environmental flows for downstream functional ecosystems • Limits of acceptable change in hydrology • No-go areas/sites (protected; human use; indigenous territory) • GHG emissions by reservoirs (methane) • Forced physical or economic displacement • Cumulative effect of HP cascades and multiple water uses. • Need for upstream land conservation at basin level for sediment control (lifetime of reservoir) • Erosion of coastal zone and river bed/embankments