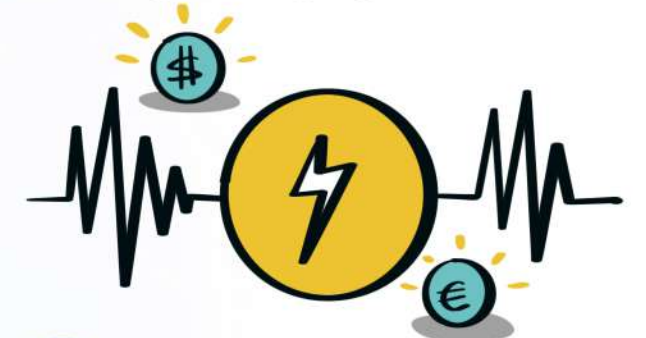


Key Messages for CSO and Media Advocacy

REGIONAL COOPERATION

TRANSITION TO NEW RENEWABLES IS THE WAY FORWARD FOR GANGES BASIN COUNTRIES!



1 SUPPLY SHOCKS MAKE THE ENERGY SECTOR & COUNTRIES VULNERABLE



2 UNCERTAINTIES OVER FUTURE WATER AVAILABILITY MAKE HYDROPOWER PROJECTS UNRELIABLE (CLIMATE CHANGE IMPACTS)

3 IMPROVE COORDINATION BETWEEN GOVERNMENT AGENCIES WORKING ON ENERGY & WATER



4 NEW RENEWABLES CAN HELP INCREASE THE WATER AVAILABILITY FOR OTHER SECTORS



PRIORITIES FOR NEPAL

1 REDUCE OVERDEPENDENCE ON HYDROPOWER AND FOCUS ON NEW RENEWABLES AND REGIONAL TRADE (POLICY INTERVENTION)



2 INVESTMENT ON COST-BENEFIT ANALYSIS & DOCUMENTATION OF IMPACTS OF HYDROPOWER ON PEOPLE & ECOSYSTEM SERVICES (FISHERIES, BIODIVERSITY)

PRIORITIES FOR BANGLADESH

1 REFORM POLICIES TO MOVE FROM LNG & COAL TO NEW RENEWABLES (POLICY INTERVENTION)



2 PUSH INDIA FOR JOINT INVESTMENTS IN REGIONAL GRID CONNECTIVITY PROVIDING IT ACCESS TO NEPAL



3 CONSIDER DEVELOPING TRIPARTITE UNDERSTANDING WITH NEPAL AND INDIA

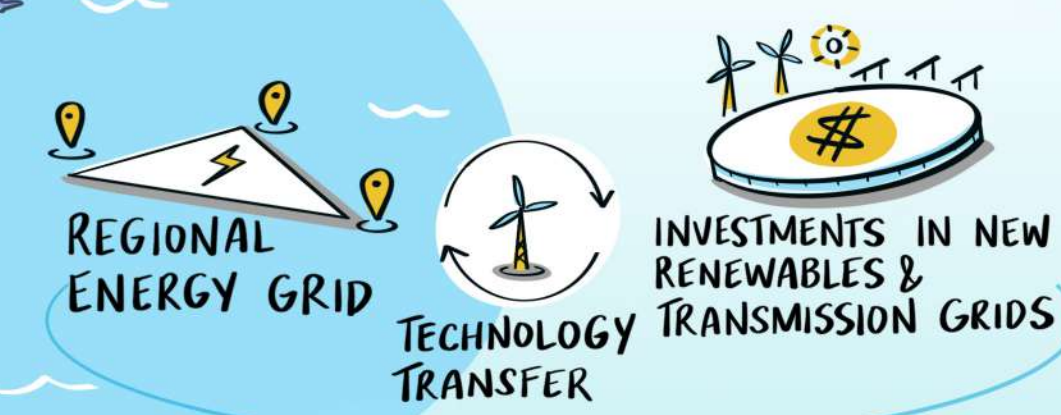


NEEDS TO PROVIDE THE TRANSMISSION LINE



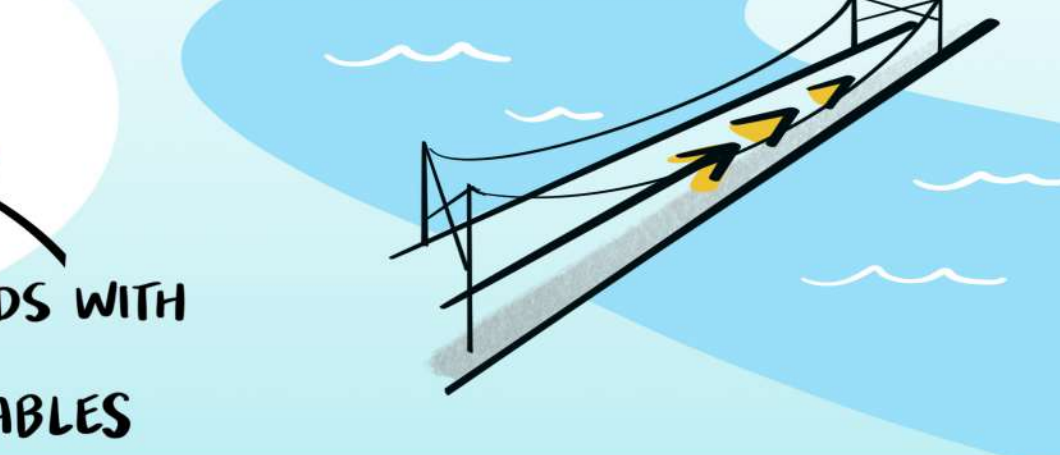
PRIORITIES FOR INDIA

1 INDIA AS ENABLER OF REGIONAL ENERGY COOPERATION!



2 INDIA SHOULD JOIN HANDS WITH NEIGHBORS TO DEVELOP ECOSYSTEM FOR RENEWABLES

3 INDIA SHOULD PROVIDE LEADERSHIP FOR SUSTAINABLE ENERGY TRANSITION IN THE GANGES BASIN



Scenario 1: Business-as-usual

* ASSUMPTIONS

All hydropower and fossil fuel projects are completed, some electricity trade occurs at the regional level, although on a delayed timeline given geo-political challenges.

Nepal's power capacity increased by more than 4,512 MW, much of which would be for export.

National Determined Contributions (NDC), fossil fuel price fluctuations and drop in per unit price of new renewables (Solar and Wind) - drive renewable energy diversification

ENERGY MIX & DIVERSIFICATION

RESILIENCE TO SHOCKS

RIVER CONNECTIVITY & ENVIRONMENTAL RISKS

ALL 3 COUNTRIES REMAIN VULNERABLE TO SHOCKS TO THE GLOBAL OIL, GAS & COAL MARKETS

MORE THAN **250** DAMS IN GANGES BASIN ACROSS INDIA & NEPAL

BANGLADESH

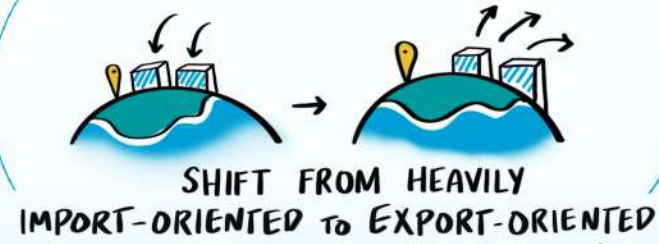
BANGLADESH

HIGHLY DEPENDENT ON FOSSIL FUELS

BY MID-2030, BANGLADESH HAS NEGOTIATED TO INCREASE POWER IMPORTS FROM INDIA & NEPAL VIA INDIA'S GRID

NEPAL

DOMINATED BY HYDROPOWER



SHIFT FROM HEAVILY IMPORT-ORIENTED TO EXPORT-ORIENTED



VULNERABLE TO PRICE CHANGES



MAY FACE BLACKOUTS



SIMILAR CHALLENGES TO 2022 PRICE SPIKES

SOLAR AND WIND ENERGY

RAPID INCREASE IN INDIA

MARGINAL INCREASE IN NEPAL & BANGLADESH



NEPAL HYDROPOWER REMAINS VULNERABLE TO WET/ DRY SEASON CHANGES, WITH ALLEVIATED IMPORTS DURING THE DRY SEASON

NEW DAMS WOULD SIGNIFICANTLY IMPACT RIVER CONNECTIVITY

SEVERELY IMPACTS RIVER CONNECTIVITY IN THE GANGES BASIN

BLOCKING OFF STRETCHES OF RIVER FOR FISH MIGRATION & SEDIMENT FLOW



SIGNIFICANT LOSS OF BIODIVERSITY

Scenario 2: Nationally driven alternative renewable energy scenario

*ASSUMPTIONS

Countries expand solar and wind technologies domestically and prioritize that over large-scale hydropower development and imports.

Continued price drops of non-hydropower renewable energy technologies — particularly solar PV, floating solar, and wind - drive investment towards alternatives.
Year-on-year price drops 15% for onshore wind and 13% for solar and offshore wind in 2022

ENERGY MIX & DIVERSIFICATION

BANGLADESH, INDIA, & NEPAL ALL SEE IMPROVED DIVERSIFICATION OF ELECTRICITY SUPPLY COMPARED TO BUSINESS-AS-USUAL SCENARIO

RESILIENCE TO SHOCKS

IMPROVED CLIMATE RESILIENCY AND REDUCTION IN VULNERABILITY TO INDIVIDUAL SHOCKS LIKE OUTAGES CAUSED BY INFRASTRUCTURE DAMAGE & NATURAL HAZARDS

RIVER CONNECTIVITY & ENVIRONMENTAL RISKS

INCREASE IN STORED WATER FOR PUMPED HYDROPOWER STORAGE COULD ALTER WATER FLOWS AND HAVE ENVIRONMENTAL IMPACTS FOR COMMUNITIES DOWNSTREAM

WATER-RELATED CONTENTIONS BETWEEN RIPARIAN COUNTRIES

LACK OF COORDINATION LEADS TO DEVELOPMENT OF LARGE-SCALE HYDROPOWER PROJECTS

TRANSBOUNDARY IMPACTS ON RIVER CONNECTIVITY, SEDIMENT FLOW, & MIGRATION OF FISH

SIGNIFICANT INCREASE IN LAND-BASED SOLAR & WIND FARMS COULD IMPACT NON-RIVERINE ENVIRONMENT

SOCIAL IMPACTS DUE TO LAND-USE CHANGES DRIVING FOREST & BIODIVERSITY LOSS, & SOCIAL CONFLICT

RAPID INCREASED RELIANCE ON VARIABLE SOLAR & WIND MAY CAUSE SHORT-TERM DISRUPTIONS TO THE ELECTRICITY SYSTEM

BANGLADESH

WIDESPREAD DEPLOYMENT OF ROOFTOP SOLAR

REDUCING PEAK DEMAND ON THE GRID

REDUCING THE LIKELIHOOD OF POWER SHORTAGES BY THE MID-2030s

NEPAL

FLOATING SOLAR TO COMPLEMENT EXISTING DAMS

LACK OF A CLEAR FUTURE MARKET FOR HYDROPOWER HINDERS HYDROPOWER PROJECTS UNDER CONSTRUCTION

Scenario 3: Alternative Renewable Energy with Regional Cooperation

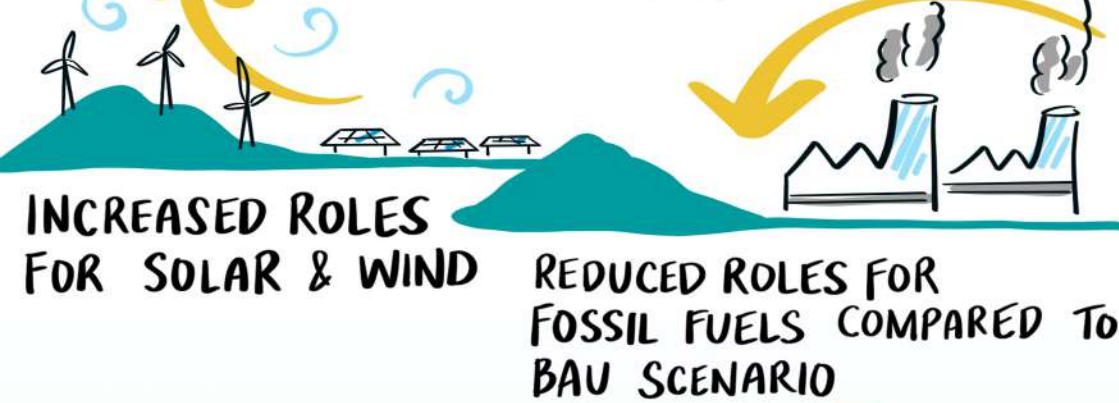
* ASSUMPTIONS

Construction of hydropower with high socio-ecological impacts avoided due to regional cooperation and trade in renewable electricity trade

Regional Sustainable Energy Blueprint for the Ganges and tripartite power purchase agreements allowing electricity flow to Bangladesh from Nepal via India's power grid. (Power flowing from Nepal to India to Bangladesh and vice-versa)

ENERGY MIX & DIVERSIFICATION

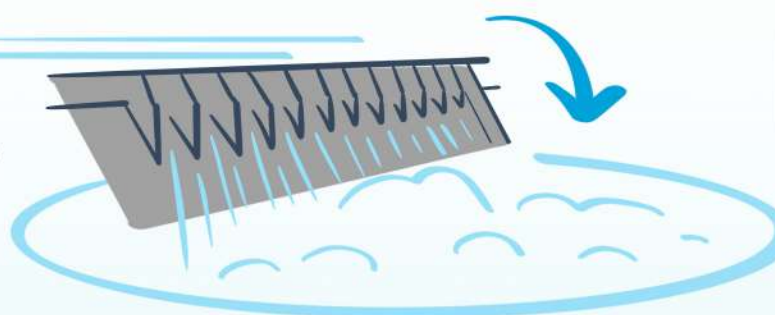
INCREASED DIVERSIFICATION OF ENERGY MIX



INCREASED ROLES FOR SOLAR & WIND

REDUCED ROLES FOR FOSSIL FUELS COMPARED TO BAU SCENARIO

DEMAND FOR HYDROPOWER IS REDUCED FROM BAU



JOINT INVESTMENTS IN

LARGE-SCALE SOLAR FARMS

COMMERCIAL-SCALE ROOFTOP SOLAR

FLOATING SOLAR



RESILIENCE TO SHOCKS

ALL 3 COUNTRIES RESILIENT TO GLOBAL ENERGY PRICE FLUCTUATIONS



NEPAL HAS IMPROVED ENERGY DIVERSIFICATION LESS VULNERABLE TO DROUGHTS & DRY SEASON PRODUCTIVITY



ALL 3 COUNTRIES SEE IMPROVED FLEXIBILITY VIA SPOT MARKETS



IMPROVED INTERLINKAGES BETWEEN NATIONAL GRIDS

ALLOWING FOR SHORT-TERM ELECTRICITY IMPORTS FROM NEIGHBORS WHEN DISRUPTIONS OCCUR



RIVER CONNECTIVITY & ENVIRONMENTAL RISKS



PRIORITIZATION OF LOW-IMPACT HYDROPOWER PROJECTS

STRATEGIC & SELECTIVE SITING OF ANY NEW DAM INVESTMENTS



RIVER CONNECTIVITY IS NOT SIGNIFICANTLY FRAGMENTED BEYOND THE CURRENT SITUATION IN 2022



SOME IMPACTS DUE TO LAND-USE CHANGES DUE TO NEW RENEWABLE & HYDROPOWER PROJECTS



MINIMIZED IMPACTS TO TRANSBOUNDARY SEDIMENT FLOW AND FISH MIGRATION

