Energy Policies and Acts in South Asia Region

Title	Integrated Energy Policy, 2008			
Date	26-December, 2008			
Jurisdiction	India	Central		All River Basins
Timeframe	2012-Till Date	**Status**	Implemented	
Issued By	Planning Commission, GoI			
Keywords	Energy, India			
Web link	http://planningcommission.nic.in/reports/genrep/rep_intengy.pdf			
Objectives	In order to ensure energy security in the country in terms of power, the government is making all possible efforts, which include the following: • To meet the stipulated demand for electricity through power generation using a mix of various energy sources including renewable energy. • To ensure better availability and improved power supply from old and ageing plants, thrust is being given to Renovation & Modernisation and Life Extension of old power plants. • To ensure Energy Security by adopting measures like Demand Side Management and Energy Efficiency • Assisting the neighbouring country Bhutan in the development of the hydro power potential for mutual benefits.			
Highlights	• This is a comprehensive policy on energy for India. The integrated policy is expected to explore alternative technologies and possible synergies that would increase energy system efficiency and meet requirement for energy services. • It would allow for relative pricing of different fuels taking into account both their efficiency in use and convenience as well as the amount of pollution they generate. • The policy envisages a competitive energy market and market-determined energy pricing. • Allocation of energy resources shall be based on competition. This policy of pricing and allocation will reduce amount of POL subsidies and thus bring down fiscal deficit. • Though there will be subsidies, but they will be based on transparent and target oriented system. Policy seeks to reduce black-marketing of subsidised petroleum products. • The policy seeks optimal exploitation of domestic energy resources and also vigorous exploration and acquisition of energy assets abroad, so that energy security can be attained effectively. • The policy aims to meet energy demands of all sectors. Therefore, not only production of energy will be increased but also its transfer will be made cost-effective. Consideration of environment is also taken into account. • It also seeks to ensure energy security by - lowering the requirement of energy, - substituting imported fuels with alternatives, - expanding the domestic energy resource base, - maintaining reserve equivalent to 90 days of oil imports, - building strategic stockpile of nuclear fuel to counter the risk of disruption of international fuel supply, - acquiring energy assets abroad and setting up energy using industries such as			

	fertiliser plants in energy rich countries.
Key Issues	• It has been rightly pointed out that for India to attain Energy Security, the country needs to have more Hydro Power Plants and put in more efforts to tap its reserves of Thorium. Nuclear Power Plants do have great potential. Moreover, Hydro Electricity can help India attain its Peak Deficit. However, there are several societal and environmental aspects, which needed to be considered prior to the establishment of Big Hydro Power Plants and the Nuclear Power Plants. It is important that India becomes Energy Independent and over dependence on coal can never help India achieve it, but proper safety and precautionary measures need to be taken to avoid any loss. • Emphasis on R&D works for New and Renewable Energy sources is also required. India should also gradually think out of utilizing only Solar, Wind, Biomass and small Hydro opportunities when it comes to Renewable Energy. Should consider on investing more on R&D works on technologies like tidal energy, Geothermal Energy, Hydrogen Energy and fuel cell. Large scale commercialization of the feasible technologies is required and MNRE has started concentrating on Concentrated Solar Technologies and Hybrid technologies, but a lot more is needed to be done in the R&D sector. • Despite an enormous increase in the installed capacity since independence about 40% of our households are denied electricity, and even the other 60% are not getting quality supply. However, there will be unsustainable pressure on natural resources of our society associated with a huge growth projection. The long term impacts of the same on the vulnerable sections of our society including the fragile environment and bio-diversity have not even been discussed in this policy. Thus, the IEP as a policy document has failed to meet the expectations of a welfare society.

Title	**National Electricity Policy, 2005**		
Date	12th, February, 2005		
Jurisdiction	India	Central	All Basins
Timeframe	2005- Till Date	**Status**	Implemented
Issued By	Ministry of Power, GoI		
Keywords	Energy, India		
Web link	http://powermin.nic.in/whats_new/national_electricity_policy.htm		
Objectives	The National Electricity Policy aims at achieving the following objectives: • Access to Electricity - Available for all households in next five years • Availability of Power - Demand to be fully met by 2012. Energy and peaking shortages to be overcome and adequate spinning reserve to be available. • Supply of Reliable and Quality Power of specified standards in an efficient manner and at reasonable rates. • Per capita availability of electricity to be increased to over 1000 units by 2012. • Minimum lifeline consumption of 1 unit/household/day as a merit good by year 2012. • Financial Turnaround and Commercial Viability of Electricity Sector. • Protection of consumers' interests.		
Highlights	• About 56% of rural households have not yet been electrified even though many of these households are willing to pay for electricity. Determined efforts should be made to ensure that the task of rural electrification for securing electricity access to all households and also ensuring that electricity reaches poor and marginal sections of		

	the society at reasonable rates is completed within the next five years. • Decentralized distributed generation facilities together with local distribution network would be provided so that every household gets access to electricity. This would be done either through conventional or non-conventional methods of electricity generation. • Particular attention would be given in household electrification to dalit bastis, tribal areas and other weaker sections. • Responsibility of operation & maintenance and cost recovery could be discharged by utilities through appropriate arrangements with Panchayats, local authorities, NGOs and other franchisees etc. • The Electricity Act 2003 has put in place a highly liberal framework for generation. There is no requirement of licensing for generation. The requirement of techno-economic clearance of CEA for thermal generation project is no longer there. For hydroelectric generation also, the limit of capital expenditure, above which concurrence of CEA is required, would be raised suitably from the present level. Captive generation has been freed from all controls. • Hydroelectricity is a clean and renewable source of energy. Maximum emphasis would be laid on the full development of the feasible hydro potential in the country. Harnessing hydro potential speedily will also facilitate economic development of States, particularly North-Eastern States, Sikkim, Uttaranchal, Himachal Pradesh and J&K, since a large proportion of our hydro power potential is located in these States. • The Central Government will support the State Governments for expeditious development of their hydroelectric projects by offering services of Central Public Sector Undertakings like *National Hydroelectric Power Corporation (NHPC)*. • Feasible potential of non-conventional energy resources, mainly small hydro, wind and bio-mass would also need to be exploited fully to create additional power generation capacity. • The Central Government would facilitate the continued development of the National Grid for providing adequate infrastructure for inter-state transmission of power and to ensure that underutilized generation capacity is facilitated to generate electricity for its transmission from surplus regions to deficit regions. • The Central Transmission Utility (CTU) and State Transmission Utility (STU) have the key responsibility of network planning and development based on the National Electricity Plan in coordination with all concerned agencies as provided in the Act. • Distribution is the most critical segment of the electricity business chain. The real challenge of reforms in the power sector lies in efficient management of the distribution sector.
Key Issues	• India failed to achieve the per capita electricity consumption target of 1000 units in 2012. The all India electricity per capita consumption in 2012-13 was 914.41 kWh and in 2013-14 it was 957 kWh (Provisional). The target seems to be quite unrealistic. • Rural Electrification states that at least 10% of the households in the village should be electrified. Even going by the definition of rural electrification although a lot of villages have been electrified not all villages are so privileged. Now stress should be put more on household electrification rather than on Rural Electrification. • Although the One Nation One Grid has been finally achieved in December, 2013, power quality issues still continue to threat the nation. Providing quality power is one of the key issues of the nation. • * How can Decentralized Distributed Generations utilize Conventional Sources of energy? Establishing a Thermal or a Big Hydro Plant attracts huge investment and it cannot be used for supplying power only to a few villages and hamlets. Moreover such

	plants will never decentralized in nature and are always connected to the main grid. What is the difference between a local distribution network and a decentralized distributed generation system? This is also not clear from the policy. • Other than state's interest and willingness, there are issues related to fuel supply linkages, clearances and security concerns cited by the states and players as the reasons for inadequate thrust on developing potential in some of the states and areas. • The major issue on pricing is its inability to send a proper signal to suppliers and consumers to effect intended behavioural changes. For instance, the cost-plus principle does not incentivise generators to improve and invest in energy efficiency. Furthermore, current stiff pricing mechanism limits the choice of policy instruments for demand-side management. • Untargeted subsidy mechanisms, under which power tariffs are kept artificially low, does not necessarily reach the most needed, while it fails to send proper pricing signals to those who can adjust consumption to price changes. Similarly, it undermines the cost-recovery prospect of investment. • In case of hydro projects in North East the problem of security is perceived as one important impediment besides the lack of transmission capacity. • Private investment in the power sector remains below expectation and should be increased.

Title	**Electricity Act, 2003**		
Date	2003		
Jurisdiction	India	Central	All Basins
Timeframe		**Status**	Implemented
Issued By	Ministry of Law and Justice (Legislative Department)		
Keywords	Energy, India		
Web link	http://www.cercind.gov.in/08022007/Act-with-amendment.pdf		
Objectives	The Act guides the laws related to generation, transmission, distribution, trading and use of electricity. This act came into force to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally for taking measures conducive to development of electricity industry, promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalisation of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and for matters connected therewith or incidental thereto.		
Highlights	• State Government to unbundle the sector with transmission and system operation made independent of any other businesses in the sector, viz., generation, distribution, and trading. • No requirement of license for generation and no requirement of technoeconomic clearance except for large hydro-generation projects. • Captive generation capacity to have open access to the transmission system and not subject to any regulations for its pricing. Definition of captive generators liberalized to include any capacity set up by an association of persons. • All others- transmission, distribution, and trading require licence from the regulators (CERC or SERCs) depending upon the area of their operations. • Independent regulators to regulate the sector including award and revoking of licences, tariff setting consistent with National Electricity Policy, defining and		

	enforcing performance standards and quality of service, and setting Grid Standards. • Creation of regulatory fund at the central and state level with accountability to the Parliament and Legislature respectively. • Regulators to reduce cross-subsidies and move towards allowing open access to a class of consumers in a phased manner. • Multiple distribution licensees allowed for distribution. • State Government to pay subsidy in advance. And tariffs to revert back to levels determined by the ERC, if the subsidy is not paid. • Stringent measures for theft and unauthorized use of electricity including creation of Special Courts for dealing with such cases quickly. • Insistence on 100% metering within two years of enactment. • Appointment of an Ombudsman and creation of Consumer Grievance Redressal Forum for consumer interest protection. • Establishment of Appellate Tribunal to fast-track the appeal process on rulings of ERCs with Supreme Court being the final arbiter. • CEA to be the body for techno-economic clearances of large hydro projects, for planning (National Plans) and for advice and definition of technical standards
Key Issues	• There is no open access to electricity. Consumers do not get the choice to buy power from companies of their choice rather than being tied to a single provider as is the case in most states. • It is required to expand the scope of the Electricity Act to push for higher utilisation of renewable energy

Title	**New Hydro Policy, 2008**		
Date	2008		
Jurisdiction	India	Central	All
Timeframe	11th Plan, 12th Plan, 13th Plan, & 14th Plan	**Status**	Existing
Issued By	Ministry of Power, GoI		
Keywords	Energy, India		
Web link	http://powermin.nic.in/whats_new/pdf/new_hydro_policy.pdf http://www.ielrc.org/content/e0820.pdf		
Objectives	The government of India has set the following broad policy objectives for accelerating the pace of hydro power development: • Inducing private investment in hydro power development • Harnessing the balance hydroelectric potential • Improving resettlement and rehabilitation • Facilitating financial viability		
Highlights	Following are the highlights of the policy: • In order to encourage private producers to undertake Hydro projects in difficult and remote areas, exemption from tariff based competitive bidding which is currently available only to Public Sector Undertakings upto January 2011, is now also available to private hydro projects. • The developer will now have the facility of merchant sale of upto 40% of the saleable energy in hydro projects. • An additional 1% free power over and above 12% will be earmarked for a Local Area Development Fund aimed at providing a regular stream of revenue for income		

	generation, infrastructure creation and welfare schemes in the affected areas. • Each project affected family (PAF) will get 100 units of electricity every month for a period of 10 years free of charge. • Project authorities will construct houses at resettled sites for project affected persons. • At every project site an industrial training institute (ITI) will be set up six months • The new policy states that developers will provide the money equivalent of 1% of power generated from the project to a fund managed by the district authorities for the development of the area affected by the project. • A matching grant would be given by the state government from the 12% free power given to it by the developer. • The policy has also introduced penalties for delays. If the developer is not able to complete the project within four years of its financial closure, the quantum of power available for sale as merchant power will be reduced from 40% to 35%.
Key Issues	New Hydro policy is not able to fully reach on the following issues: • While the average time taken to develop a new hydroelectric project is around five years, many have been delayed because of reasons as varied as late investment decisions, contractual problems, land acquisition problems, geological issues and natural calamities. • Construction and operation of hydropower dams can significantly affect natural river systems as well as fish and wildlife populations. Furthermore, hydropower projects involve submergence causing the displacement of project area people. The rehabilitation of project affected people is also a major issue which is more pronounced in the case of storage-based hydropower projects. • Inter-state disputes are another aspect which hinders integrated river basin development for hydropower projects. • Problems arising in the acquisition of land for hydropower projects are causing suspension and delay in construction activities. • The power market development in India is still at a nascent stage. Though section 63 of the Electricity Act makes competitive bidding mandatory for all power procurement, hydropower projects are exempted under a sunset clause which expires by end 2015 (as per the June 2011 amendment to the Tariff Policy 2006).

Title	**National Policy on Biofuels**		
Date	11th September, 2008		
Jurisdiction	India	Central	All River Basins
Timeframe	Effective from October, 2008, and will continue to be mandatory leading up to the indicative target.	**Status**	Existing
Issued By	Ministry of New and Renewable Energy, GoI		
Keywords	Minimum Support Price, Minimum Purchase Price, Biodiesel, Water Quality Concerns		
Web link	http://mnre.gov.in/file-manager/UserFiles/biofuel_policy.pdf http://pib.nic.in/newsite/erelease.aspx?relid=56469		
Objectives	The Goal of the Policy is to ensure that a minimum level of biofuels become readily available in the market to meet the demand at any given time. An indicative target of 20% blending of biofuels, both for bio-diesel and bio-ethanol, by 2017 is proposed.		

Highlights	• Bio-diesel production will be taken up from non-edible oil seeds in waste / degraded / marginal lands. • In all cases pertaining to land use for the plantations, consultations would be undertaken with the local communities through Gram Panchayats / Gram Sabhas, and with Intermediate Panchayats and District Panchayat. • An indicative target of 20% blending of bio-fuels, both for bio-diesel and bio-ethanol, by 2017 has been proposed. • Minimum Purchase Price (MPP) for the purchase of bio-ethanol by the Oil Marketing Companies (OMCs) would be based on the actual cost of production and import price of bio-ethanol. • Financial incentives, including subsidies and grants, may be considered for second generation bio-fuels. • Bio-diesel plantations on community / Government / forest waste lands would be encouraged while plantation in fertile irrigated lands would not be encouraged. • It is also stated in the Policy that no taxes and duties should be levied on bio-diesel. • Major thrust to be given to Research, Development & Demonstration with focus on plantations, processing and production technologies including second-generation cellulosic bio-fuels. • Import of biofuels would only be permitted to the extent necessary, and will be decided by the National Biofuel Coordination Committee proposed under this Policy. Duties and taxes would be levied on the imports so as to ensure that indigenously produced biofuels are not costlier than the imported biofuels. Import of Free Fatty Acid (FFA) oils will not be permitted for production of biofuels. • Export of biofuels would only be permitted after meeting the domestic requirements and would be decided by the National Biofuel Coordination Committee.
Key Issues	• The government's initiatives have not translated into results on the production and commercialization fronts to meet the country's energy demand. This calls for a re-examination of the policy from various stages of the biofuel supply chain. • Prioritization of alternative feedstock to fulfil targeted blending mandates is called for. A Policy favouring alternative feedstock such as sweet sorghum will serve as an incentive. • The Biofuel Policy is inclined more towards the supply side. Demand side factors like providing consumption support should also be considered in promoting biofuels.

Title	**Rural Electrification Policy**		
Date	23rd August, 2006		
Jurisdiction	India	Central	All
Timeframe	2006-2012	**Status**	No amendments so far
Issued By	Ministry of Power, GoI		
Keywords	Energy, India		
Web link	http://powermin.nic.in/whats_new/pdf/RE%20Policy.pdf		
Objectives	The Policy aims at :- • Provision of access to electricity to all households by year 2009. • Quality and reliable power supply at reasonable rates. • Minimum lifeline consumption of 1 unit per household per day as a merit good by year 2012		
Highlights	***Rajiv Gandhi Gramin Vidyutikaran Yojana (RGGVY)***		

(This has been renamed to Deendayal Upadhyaya Gram Jyoti Yojana)

This scheme is being implemented by Rural Electrification Corporation for permitting standalone systems, rural electrification, bulk power purchase & management of local distribution (through franchisee model).
Under the scheme, projects could be financed with 90% capital subsidy for provision of

- Rural Electricity Distribution Backbone (REDB): Provision of 33/11 KV (or 66/11 KV) sub-stations of adequate capacity and lines in blocks where these do not exist.
- Creation of Village Electrification Infrastructure (VEI): Electrification of un-electrified villages, un-electrified habitations and provision of distribution transformers of appropriate capacity in electrified villages/ habitation(s).
- Decentralised Distributed Generation (DDG) and Supply: Decentralised generation cum-distribution from conventional sources for villages where grid connectivity is either not feasible or not cost effective provided it is not covered under the programme of Ministry of Non-conventional Energy Sources for providing electricity from non-conventional energy sources under their remote village electrification programme.
- REDB, VEI and DDG would also cater to the requirement of agriculture and other activities including irrigation pumpsets, small and medium industries, khadi and village industries, cold chains, healthcare, education and IT.

  - Rural Household Electrification of Below Poverty Line Households : Electrification of un-electrified Below Poverty Line (BPL) households would be financed with 100% capital subsidy as per norms of Kutir Jyoti Programme in all rural habitations

Policies supporting Off-grid renewable power

Remote Village Electrification Programme
This project covers all those villages that are not under RGGVY scheme. The decision for choosing particular technology for power generation in such remote areas is taken by state implementation agency after examination of technical feasibility and resource availability.

Special Area Demonstration Project Programme
The Special Area Demonstration Project Scheme of the MNRE has been introduced with an objective of demonstrating application of various Renewable Energy systems in a project mode at places of National and international importance The SADP Scheme is being implemented into two parts- Demonstration of Renewable Energy Systems at Prominent Places and the Energy Park scheme.

Renewable Energy Supply for Rural Areas
This scheme was framed with the objective of developing and demonstrating commercially viable models for de-centralized energy supply in rural areas from renewable sources.

Key Issues

- The RGGVY scheme states that DDG from conventional sources of energy would be utilized where electricity is yet to reach and is not covered under any programme of MNRE. Decentralized Distributed generation systems are those power generating systems which are not connected to the main grid and have been set up to generate

	and distribute power locally to un-electrified villages. Extension of the National grid is not a Decentralized Power Generation system. Establishing a new thermal or a big hydro plant would attract huge investment and it cannot be used for supplying power only to a few villages and hamlets. Such plants are not constructed for decentralized distribution and are always connected to the main grid. • There have been several successful cases, where Village electrification have been done by private entrepreneurs with the help of state nodal agencies and a village committee have been involved for the basic maintenance of the RE systems. Replicating such successful business models should be encouraged. There should be encouraging schemes which would motivate private entrepreneurs and NGOs to be involved in mass scale across the country in rural electrification programmes. • More explicit provisions for the private players to gain financial sustainability. Presently, the private players want to sell their product at subsidized rate. It is the duty of the Government to keep liberal and flexible approach towards the private players. ***Improper Function of Gram Panchayat:*** Though this policy laid down specific role for the Gram Panchayat, corruption has gripped this sector very badly. The Rural Electrification Corporation with the help of MNRE, DISCOMs and state nodal agencies should be made liable for periodic reviews of the work done by the Gram Panchayats.

Title	**National Tariff Policy**		
Date	6th January, 2006		
Jurisdiction	India	[*State/sub-national*]	[*River Basin*]
Timeframe	10th and 11th Plan periods	**Status**	Amendments yet to be implemented
Issued By	Ministry of Power, GoI		
Keywords	Tariff, power supply, Transmission, distribution		
Web link	http://www.aegcl.co.in/National_Tariff_Policy.pdf		
Objectives	The objectives of this tariff policy are to: • Ensure availability of electricity to consumers at reasonable and competitive rates; • Ensure financial viability of the sector and attract investments; • Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perceptions of regulatory risks; • Promote competition, efficiency in operations and improvement in quality of supply.		
Highlights	• The tariff policy has been evolved in consultation with the State Governments and the Central Electricity Authority (CEA). • All future requirement of power should be procured competitively by distribution licensees except in cases of expansion of existing projects or where there is a State controlled/owned company as an identified developer and where regulators will need to resort to tariff determination based on norms provided that expansion of generating capacity by private developers. • Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. • For financing of future capital cost of projects, a Debt: Equity ratio of 70:30 should be adopted. • The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting.		

	• Structuring of debt, including its tenure, with a view to reducing the tariff should be encouraged. • The Central Commission would, in consultation with the Central Electricity Authority, notify operating norms from time to time for generation and transmission. • A two-part tariff structure should be adopted for all long term contracts to facilitate Merit Order dispatch. • The Appropriate Commission may also introduce differential rates of fixed charges for peak and off peak hours for better management of load. • Power Purchase Agreement should ensure adequate and bankable payment security arrangements to the Generating companies. • In case of coal based generating stations, the cost of project will also include reasonable cost of setting up coal washeries, coal beneficiation system and dry ash handling & disposal system.
Key Issues	• The policy states that the distribution licensee should, in future, procure power solely through competitive bidding. But this norm does not apply in the case of expansion of existing projects. Further central generating units and state controlled / owned units are exempted from competitive bidding. • The time from which the new guideline would be applicable is not specified. It does not clarify whether it is applicable to the projects that are already under construction. • The policy states that any cash resources available to the company from its share premium account can be used to fund the equity commitment of the project. However, the 70:30 debts to equity norms would apply for the same. The equity in excess of 30 percent will be treated as loans advanced at the weighted average rate of interest and for a weighted average tenor of the long-term debt component of the project after ascertaining the reasonableness of the interest rates and taking into account the effect of debt restructuring, if it has been undertaken. The policy ensures that there is a reasonable return on additional equity and also puts the onus on the project developer to control interest costs. But no clear benchmark rates have been specified. • The NTP sates that the Multi-year tariff (MYT) framework has to be adopted for the determination of any tariff from 1 April, 2006. The appropriate commission would be guided by MYT for determining the terms and condition for the determination of tariff. The frame work is lacking its implementation equally on both public and private entities. • The policy does not clearly define as to which transmission pricing methodology needs to be used for interstate transmission. • The policy talks about providing subsidy directly to a needy consumer rather than cross-subsidising the tariff across the board.

Title	**Policy for Small Hydropower Development**		
Date	March, 2007		
Jurisdiction	India	Indian State of Assam	Brahmaputra Basin
Timeframe	Upto next amendments	**Status**	Existing
Issued By	Assam State Electricity Board, Guwahati, Government of Assam		
Keywords	Small Hydropower, irrigation, Electricity duty, land issues		
Web link	http://www.apgcl.org/Assam%20SHP%20Policy%20Aug%2016,%202007.pdf		
Objectives	The Government of Assam (GOA) has decided to encourage generation of power		

	through small hydropower (SHP) sources of energy and has framed a policy so that the development of this sector serves as an engine to achieve the objective of promoting the all-round development of the region by inducting private participation.
Highlights	• The state of Assam invites any qualified interested IPPs/ Users society to bid for identified projects for the development of this sector. • The projects shall be offered for a period of 35 (thirty five) years from the date of the award at the end of which they shall revert to the GOA. • Optimum requirement of land for implementation of a particular project shall be allotted / sold at a premium / lease to decided case wise and shall continue a part of the bid document. • The IPP /Users society can contract to sell power to any HT consumer within Assam (only up to and below 5 MW capacity), to local rural grids within Assam which are not connected to ASEB's/Successor Company's main grid, to rural power distribution entities (i.e. those which sell power to predominantly rural areas), to any consumer outside the state, or to the ASEB/Successor Company. • Sales to the ASEB/Successor Company will be mutually negotiated. All sales will be approved, as may be required, by the Assam Electricity Regulatory Commission (AERC). • In case of power supply to any rural interior areas, where SHP project may come up, IPPs /Users society can make suitable arrangements for sale of power to a group of rural consumers in a stand-alone generation and distribution system subject to fulfilment of requirements of AERC. • For project upto 5 MW, there will be no royalty, provided entire energy generated is sold within the state of Assam. For above 5 MW, a royalty @Rs. 0.25 per unit of net energy generated will be paid to GOA by IPPs/Users society. It may be reviewed after 5 years. • For power projects on irrigation canal fall/barrages/dams, a water cess @Rs. 0.05 per kWh per year shall be payable by IPPs/Users society to the irrigation department, GOA or otherwise as specified by the GOA for maintenance of the existing irrigation structures/facilities owned and operated by the irrigation department. • Electricity duty as per law will apply. No further levies, taxes, charges other than those stipulated in this policy • The discharge available in the canals of Irrigation Schemes/projects will be let out by the Irrigation Department, Government of Assam based on availability of water in irrigation canals/Rivers only.
Key Issues	• Policy is lacking to represent the remedial action on below mentioned impacts: Pollution: Greenhouse Gases, Oxygen Depletion, Methyl Mercury Contamination, Water Quality, Reservoir Induced Seismicity • Land use issue: Involuntary Resettlement, Inter-State conflicts and Law & Order Problem have been the major issues related to land use. These need to be covered by the policy.

Title	**Bihar Policy for promotion of New and Renewable Energy Sources 2011**		
Date	14/06/2011		
Jurisdiction	India	Bihar	Ganges River Basin
Timeframe	Upto 24th June, 2016	**Status**	Existing
Issued By	Bihar Renewable Energy Development Agency (BREDA)		
Keywords	Energy, Bihar, India		
Web link	http://energy.bih.nic.in/		

	http://energy.bih.nic.in/docs/REP-2011-English.pdf
Objectives	(1) to develop systems and products specifically designed to address the need of the poorest segment of the population; (2) to reduce the cost of rural off-grid technologies to levels that could compete with conventional energy options; (3) to implement innovative mechanisms to further lower the costs to the income levels of the target population; and (4) to support capacity building and technical cooperation programmes that would allow creation of stable markets for new and renewable energy in developing regions particularly in rural areas.
Highlights	• **Project approval:** The project developer for obtaining the desired approval should submit the application along with a pre-feasibility report, applicable processing fee & site details to the State Investment Promotion Board (SIPB), Department of Industries, Government of Bihar. The nodal agency for RE projects in Bihar is *Bihar Renewable Energy Development Agency (BREDA),* but that for the mini/micro/small hydro projects is the Bihar State Hydro Electric Power Corporation (BSHPC). • **Grid interfacing and evacuation arrangement:** a) Except the Captive Projects, all other renewable energy project developers should supply at least 25% of Power Generated to the Bihar State Electricity Board (BSEB)/Distribution Licensee. b) The sale of power from such generation project to the grid or using the greed for wheeling of power the third parties will require the project developer to design and construct the system at its own cost, such that interfacing with the State grid/BSEB grid is done as per the latter's specifications & requirements/Indian Electricity Grid Code/ Bihar Grid Code as applicable and amended from time to time. c) The capital cost of transmission system for evacuation of power to the nearest grid/ sub-station including all metering & protective instruments shall be born by BSEB, which shall be reimbursed to BSEB by the State Government, provided that the project developer offer to supply BSEB// Distribution Licensee at least 50%, subject to a minimum of 2 MW, of power generated from New and Renewable Energy projects. Else the entire project cost of transmission system for evacuation of power to the nearest grid/ sub-station including all metering & protective instruments shall be born by the project developer. • **Sale/wheeling of Power:** a) The project developer may sell to third party/utilize generated power at the place of generation or at any other place for the captive use, through BSEB network on payment of applicable Open Access charges surcharges & additional surcharge and any other charges as approved/notified by Bihar Electricity Regulatory commission (BERC) and as per BERC (Terms & Conditions for Open Access) Regulation, 2006 as amended from time to time provided that the third party must be an HT consumer procuring at least 1MW power. The Project Developer shall execute an Open Access Agreement with the BSEB for availing open access and wheeling of such power. b) The sale of electricity by the New and Renewable Energy project shall be governed by the Power Purchase Agreement (PPA) executed between Project Developer and BSEB, as prescribed by BERC. • **Project Monitoring:** All the project activities are required to adhere to the time schedule mentioned in the policy • **Incentives/applicability:** a) All New and Renewable Energy projects will be entitled for benefits, available as notified from time to time, under the policies of the Central/State government; shall be entitled to avail the facilities available under

	prevalent Industrial Incentive Policy, and such other policies of the Govt. of Bihar. b) BREDA/BSHPC will provide necessary information and assistance regarding identification and selection of feasible sites.
Key Issues	• Limited scope for private investment, limited incentives for private sector, lack of system to promote DRE technologies, etc have not been addressed by this policy. • There is a lack of clarity in the policy as to what would happen to the investments by private sector once the grid reaches the un-electrified areas or the supply of power from the grid becomes more reliable.

Title	**New and Renewable Sources of Energy (NRSE) Policy – 2012**
Date	26th December, 2012
Jurisdiction	[*Country/State/Sub-National*] Indian state of Punjab Indus River Basin India
Timeframe	remain in operation till the Government notifies the new policy **Status** effective from the date of its notification
Issued By	Punjab Energy Development Agency (PEDA) is the nodal agency for the implementation of the NRSE Policy on behalf of the Govt. of Punjab.
Keywords	renewable energy, agriculture, industry, Wind Power, preferential tariff
Web link	http://peda.gov.in/eng/Data/pdfs/policies_acts.pdf
Objectives	This policy aims to achieve the following objectives: • To maximise and improve the share of new and renewable sources of energy to 10% of the total installed power capacity in the state by 2022. NRSE sector wise details are mentioned separately. • To promote renewable energy initiatives for meeting energy / lighting needs in rural areas and supplementing energy needs in urban, industrial and commercial sectors. Further, in order to achieve the aforesaid objectives, the following shall be the major strategic initiatives: • To create conducive conditions for attracting private sector investment in NRSE projects along with broader participation by public community/civil society. • To provide decentralized renewable energy for agriculture, industry, commercial and household sector particularly in rural areas thereby improving the quality of power and reducing transmission & distribution losses. • To give support to specific NRSE projects and schemes for generating energy and conserving energy through energy efficiency. • To support research and development, demonstration and commercialization of new and emerging technologies in renewable energy sector such as fuel cell, hydrogen and chemical energy, alternate fuels for transportation etc.
Highlights	**Small/ Mini / Micro Hydel:** By virtue of its topographic location and agriculture base the State Government is committed to exploit the total potential by the year 2022. **Biomass/Agro residue:** Punjab is primarily an agrarian economy and holds tremendous potential for energy generation from agro- residues like Cotton stalks, Paddy Straw, Paddy Husk etc. It is proposed to achieve a target of 600 MW power generations in this sector by 2022. The existing industries like Sugar, Paper and others have still an estimated unexploited potential of about 500MW of co-generation. **Urban, Municipal and Industrial Liquid / Solid Waste:** At present about 5000 Metric

	Tons of Municipal, Urban and Industrial solid waste is being produced every day in the urban areas of the State. Introducing scientific processing and treatment of this quantity of waste would add to power generation besides being environmentally benign. **Solar Power generation:** Punjab is endowed with vast potential of solar energy with over 300 days of sunshine in a year with insolation level varying between 4-7 Kw/sq.mtr. Solar Power Generation capacity is targeted at 1000 MW by 2022. **Wind Power:** Wind power potential is low in the State as the necessary wind speed is not there. The state will support programmes to set up innovative technology based wind turbines. **Promotion of Green Technologies:** PEDA shall facilitate and promote the green technologies in the state for furthering the economic and industrial development. Technologies such as Electric Vehicles, Compressed Biogas for Transportation, Green battery technologies, energy efficient, carbon neutral building technologies shall be promoted. There is a potential of saving of energy upto 20-25% in different sectors of the economy in the state.
Key Issues	• Should consider focussing more on R&D works on technologies like tidal energy, Geothermal Energy, Hydrogen Energy and fuel cell. Large scale commercialization of the feasible technologies is required and India and its states need to think out of only Solar, Wind, Biomass and small Hydro when it comes to Renewable Energy. The interest of the nation towards relatively new and upcoming technologies like Concentrated Solar Technologies and Hybrid technologies can be a major boost to the state. • The policy says that all NRSE projects of capacity upto 1 MW shall be allocated on the recommendation of PEDA. However, the policy fails to give a clear directive towards the small RE systems. It is not mentioned in the policy whether these RE systems can be grid connected and in case of grid connection the mode of connection is also not mentioned (Feed in Tariff Net Meter or Gross Meter). Thus the tariff can also not be set.

Title	**Energy Policy, 2009**		
Date			
Jurisdiction	India	Indian State of Uttar Pradesh	Ganges River Basin
Timeframe	11th Plan and the ensuing 12th Plan	**Status**	Implemented
Issued By	Department of Energy, Government of Uttar Pradesh		
Keywords	Energy, Uttar Pradesh, India		
Web link	http://www.uppcl.org/uppcllink/documents/03112009043714Revised_EnergyPolicy2009.pdf		
Objectives	The following are the principle objectives in this direction: • Access to electricity to all households in next five years • Power Demand to be fully met by 2014. Energy and peaking shortages to be overcome and adequate spinning reserve to be available. • Supply of Reliable and Quality Power of specified standards in an efficient manner and at reasonable rates.		

	• Per capita availability of electricity to be increased to over 1000 units by 2017 • Financial Turnaround and Commercial Viability of Electricity Sector thereby reducing the financing burden on the State over a period of time while recognizing the fact that during the initial transition period, state support would be a key determinant for the success of entire exercise • Protection of consumers' interests • To increase the availability of power by (a) encouraging augmentation of environment friendly generating capacity b) sourcing competitive and reliable bulk power from sources both within and outside the state c) Encouraging developers • Optimization of generation of existing plants by putting up additional units, through renovation and modernization • To augment the transmission and distribution capacity and refurbish the existing capacity with a view to improving efficiencies, reliability & quality of supply and reducing losses. • To encourage efficient usage of electricity & facilitate energy conservation measures including demand side management. • To aim at building up a sophisticated and skilled trading entity with a view to utilizing the significant opportunities offered by the new Act. • To facilitate consumers benefiting from competition & towards this end encourage private sector participation in all areas viz. generation, transmission, distribution, trading and R&M. • To strive towards expeditious electrification and supply of electricity to all villages and households in the state.
Highlights	• The land requirements for the power plant under this policy may be identified by the developer or by the State Government. State Government shall facilitate land assembly as per the policy of the State Govt. However, the land cost would be fully borne by the developer. • The Government of Uttar Pradesh shall facilitate needed water linkages expeditiously and will assist in obtaining clearances from Centre. • The State would also vigorously follow up with the existing plants to optimize their capacity for increased availability of power by providing the incentive to sell part of increased capacity to third party. • Private Sector and Government undertakings may be allowed to operate/manage the plants wherever necessary. Such participation by the private sector/ Joint sector may follow the following routes: a) Lease, Rehabilitate, Operate and Transfer (LROT); b) Joint Asset Management with state utilities; c) Sale of existing plants to private sector or to any joint sector venture for new capacity installation at old site.. • The State will encourage setting up of cogeneration plants based on baggasse / bio mass or any other non-conventional fuel. • GoUP would encourage private participation in Transmission so as to attract the necessary investments for strengthening and expansion of the Transmission system.
Key Issues	• Contradicts the National electricity Policy, 2005 which states that electricity should be provided to all by 2009-10. • More stress should have been put on Hydro and Solar to meet the peak supply-demand gap of the state. • This policy has failed to put a cap on high transmission and distribution losses (T&D) which are boosting the yearly deficits. The majority of power generated in Uttar Pradesh is reliant on coal, while the limited availability and high prices of coal have aggravated the precarious power situation in

	UP. No explicit emphasis has been given on the Renewable Energy Options in this Policy.

Title	Energy Conservation Act, 2001			
Date	2001			
Jurisdiction	India	Pan India except the state of Jammu and Kashmir	Ganga and Brahmaputra River Basins	
Timeframe	Till Date	**Status**	Implemented	
Issued By	Ministry of Law, Justice and Company Affairs			
Keywords	Energy, India			
Web link	http://powermin.nic.in/; http://powermin.nic.in/acts_notification/electricity_act2003/pdf/The%20Electricity%20Act_2003.pdf			
Objectives	An Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally for taking measures conducive to development of electricity industry, promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalisation of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and for matters connected therewith or incidental thereto.			
Highlights	• For the monitoring of the act the Bureau of Energy Efficiency (BEE), a statutory body under the Ministry of Power, Government of India had been created • The Bureau had been conferred with certain powers and functions under the Energy Conservation Act (ECA) • Awareness creation; disseminating of information for efficient use of energy and its conservation; develop testing and certification procedure and promote testing facilities for certification and testing for energy consumption of equipment and appliances; strengthening of consultancy services in the field of energy conservation; promotion of research and development in the field of energy conservation; promotion of usage of energy efficient processes, equipment, devices & systems; promotion of innovative financing of energy efficiency projects; formulation and facilitation of implementation of pilot projects and demonstration projects for promotion of efficient use of energy and its conservation; arranging and organizing of training for personnel and specialists in the techniques for efficient use of energy and its conservation are some of its responsibilities • The Bureau also can recommend to the Central Government the norms for processes and energy consumption standards; the particulars to be displayed on label on equipment or on appliances and manner of the display; to notify any user/class of users of energy as a designated consumer and also can take suitable steps to prescribe guidelines for energy conservation building codes • There is a provision for a Central Energy Conservation Fund in the Act, which will be credited by the grants and loans made to the Bureau by the Central Government under section 19, all fees received by the Bureau under the Act, all sums received by the Bureau from any other sources which will be decided by the Central Government • The Act also provides certain power to the Central Government as well as the State Governments to facilitate and enforce efficient use of energy and its conservation			

	• The Act empowers the Central Government to establish, by notification, an Appellate Tribunal for Energy Conservation to hear appeals against the orders of the adjudicating officer or the Central Government or the State Government or any other authority under this ECA
Key Issues	• This policy puts emphasis on monitory penalties in case of any deviance. However, for a big corporate it is very easy to escape by paying the defined amount. A more stringent sanction could have forced big industrial houses to abide by the law. • More explicit clauses to ensure proper energy audit by concerned authority to be included.

Title	**Biomass Energy Policy 2011 (Draft)**		
Date	01-06-2012		
Jurisdiction	India	Indian State of Uttar Pradesh	Ganges *River Basin*
Timeframe	This power policy will be valid till 31st March 2015 or coming of new policy.	**Status**	To be Implemented
Issued By	Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA) Department of Additional Sources of Energy (Govt. of U. P.), Vibhuti khand Gomti Nagar Lucknow-226010		
Keywords	Energy, Uttar Pradesh, India		
Web link	http://neda.up.nic.in/programmes/BEP/7-BMPOLICY-DRAFT-01-06-12.pdf		
Objectives	The energy generation from biomass in Uttar Pradesh has a huge potential. However, Uttar Pradesh has a current deficit of power to the extent of 3000MW. Therefore, to narrow the demand supply gap the state must explore and rely on the huge renewable energy options. This policy was formulated to provide a basic guideline on the same.		
Highlights	• **Policy incentives:** Biomass Power Projects (including project based on Urban Solid Waste) only up to 15MW capacity shall be eligible for benefit under this policy. • **Reservation of Area for Biomass Power Plants:** In order to assure sustainability of a Biomass Power Project and to avoid unhealthy competition amongst various Biomass Power Projects, no other Biomass Power Project shall be permitted within the reserved area of existing/approved/earlier registered projects as specified here under**:**		

Capacity in MW	Area Reserved (Radius in km)
05	40
More than 5 and up to 7.5	45
More than 7.5 and up to 10	50
More than 10 and up to 12.5	55
More than 12.5 and up to 15	60

• Biomass Power Project with grid interactivity of less than 5MW capacity can be set up anywhere in the State after registration in UPNEDA. It is further provided that no area shall be kept reserved for biomass power project of capacity less than 5MW.

• It is necessary for all biomass project developer to get registered in UPNEDA. Whether it is captive or grid interactive.

• A Captive power project of any capacity can be setup in the State after Registration of UPNEDA on the availability of biomass for the project.

• In case of municipal solid waste (biomass) project, the raw material will be

	provided by the local body at a single point, free of cost from the single point onwards raw material will be transported by the project developer. • The land requirements for the power plant under this policy are to be identified by the developer. State Government shall facilitate land assembly for setting up of the plant, as per the current policy of the State Government. • However, in case of private land, land cost would be fully borne by the developer. • The government land will be leased to developer @Rs.1/-per sqm for the period of 33 years. • There will be no conversion cost in land use change. • In case of private land purchase, 50% exemption in stamp duty will be admissible. The exemption on the stamp duty of the land will be admissible @1.5 acres/MW. • The VAT on the equipments of biomass power projects will be 1% for only the first Grid Interactive biomass project in each of district and also for the first captive use 5 projects in each district. • New Captive power plant can be installed by any of the following: a) A consumer of electricity. b) A group comprising more than one consumer as joint venture. c) An actual user of power but not a consumer. d) A group of actual users of power, but not consumer as joint venture. e) A group comprising of both consumers and users of power as joint venture.
Key Issues	• This policy needs to have more detailed provisions to attract private sector investment • Transportation cost constitutes a significant portion of the costs associated with the establishment and running of biomass power plants. Policy needs to address this.

Title	**Solar Power Policy Uttar Pradesh 2013**		
Date	2013		
Jurisdiction	[*Country*]	[*State/sub-national*]	[*River Basin*]
Timeframe	This policy will come into effect from the date of issuance and shall remain in operation up to 31st March 2017.	**Status**	Existing
Issued By	Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA), GoUP		
Keywords	Energy, Uttar Pradesh, India		
Web link	http://udyogbandhu.com/DataFiles/CMS/file/Solar_Power_Policy_UP_2013.pdf		
Objectives	• To promote generation and use of clean and green power in the State by harnessing solar energy. • To put in place an appropriate investment climate which could stimulate private sector participation in development of solar power • To spread environmental awareness among the general public. • To contribute to productive use of wastelands • To enhance skills and create employment opportunities. • To promote establishment of local manufacturing facilities. • To build capacity in the State to initiate and sustain, use and effective management of newer technologies.		
Highlights	• Nodal Agency will act as single window clearance for Solar Power Projects. • Solar Power Developers who want to set up projects under this policy and do not want to sign a PPA with distribution utility of UPPCL and want to sell power to a third party, can set up plants under this policy without a bidding process but will not be		

	allowed to sign a PPA even at a future date with distribution utility of UPPCL. These plants, who want to avail the incentives as per this policy will have to register with the nodal agency, sign an agreement and furnish a performance bank guarantee till the commissioning of the project as per the time frame given in this policy. • The responsibility of getting connectivity with the transmission system owned by the STU will lie with the Project Developer. • The cost of the transmission line up to the "feed in substation" viz the point of interconnection where the metering is done shall be borne by the Solar Project Developer. • Provision of special incentive will be made by the State Government on case to case basis for such solar farms where many power plants based on solar energy are installed and the total investment is more than Rs.500 crores. • All the incentives provided under the Uttar Pradesh State Industrial Policy,2012 will be applicable on the power plants based on solar energy. • Expenditure on the construction of transmission line and substation will be borne by the State Government on all the projects in the Bundelkhand region.
Key Issues	• The policy is applicable for a minimum capacity of 5 MW projects. However, it is strongly recommended that it should be lowered to 1 MW. This would ensure that many of those interested to go for grid connected rooftop SPV systems would also be covered under this policy. Also it is not clear if anyone in the state having the required free space can have their own solar power plants. There is no eligibility criteria apart from the required minimum capacity of the plants. • Grid Connectivity: It is not clear from the policy whether Feed in Tariff mechanism (Gross Metering) would be followed or Net Metering would be adopted in the state. • For the domestic consumer, a tedious approval process to obtain subsidy and the presence of multiple partners (MNRE, state implementation agency, project developer) makes installation a cumbersome task. • .

Title	**Policy on Co-generation and Generation of Electricity from Renewable Sources of Energy**		
Date	5th June, 2012		
Jurisdiction	India	Indian State of West Bengal	Ganges *River Basin*
Timeframe	2012-2022	**Status**	Existing
Issued By	Department Of Power & Nonconventional Energy Sources, Govt. of West Bengal		
Keywords	Renewable Sources, resettlement, investment, private sector		
Web link	http://www.wbreda.org/renewable-energy-policy-of-west-bengal/		
Objectives	• The objective of the Renewable Energy Policy for West Bengal is to promote and facilitate the growth of generation of electricity from renewable energy sources. • This Policy is also aimed at removing constraints by providing a guiding framework for promotion and development of appropriate RE technologies. • The long-term and short-term objectives of the Policy are detailed below: Long-term objectives i) Facilitating enhanced contribution of electricity generation from RE resources; ii) Facilitating and sustaining private sector investment in the development of renewable energy and iii) Adopting / evolving RE technologies and facilitating commercial development of		

	the same e.g. wind, solar, tidal, geothermal etc; Short-term objectives i) Identifying technology-wise thrust areas and strategies for RE in the State; ii) Developing a Roadmap for each of the RE technologies; iii) Facilitating RE investments in the public as well as the private sector; iv) Charting an energy-mix and framing a timeline in synch with the RPOs; v) Developing future RE technologies via pilot projects, and vi) Framing the basic building blocks to develop necessary regulatory, administrative, infrastructural and institutional mechanisms.
Highlights	• The Nodal Agency will act as a Single Window for obtaining assistance from all line Departments. • Interfacing equipments, including transformers, panels, kiosks, protection metering, as well as their maintenance will be undertaken by the developers according to the specification and requirements of the transmission/distribution licensee for which such eligible developers will bear the entire cost. • Maintenance of the evacuation system will be carried out by the transmission/distribution licensee at charges to be decided by the licensee/WBERC, whenever it is set up. • It is mandatory for the Developer to start the work of the project within six months of getting all the necessary statutory clearance. • The RPO will be as per the West Bengal Electricity Regulatory Commission (Co-generation and Generation of Electricity from Renewable Sources of Energy) Regulations, 2010 or the subsequent amendment of the same. • Utilities are free to procure power from outside the boundary of the State to meet its RPO, provided, that the procurement price shall not be more than the capped price prescribed by WBERC. • The permission for use of Government land will be given for 30 years or the project life whichever is less. • In order to finance various initiatives for development of RE in the State, a Green Energy Fund shall be created by the Nodal Agency. The Nodal Agency shall also be responsible for managing of the Green Energy. Eighty (80) percent of the penalty imposed for violation of any statutory clearances shall also be channelled into the Green Fund. Moreover, 50 percent of the penalty imposed for not meeting the RPO by the obligated entities shall also be fed into the Green Fund.
Key Issues	• It has not been mentioned what would happen to the Decentralized Distributed Generation projects once the Grid comes in the remote areas. • The policy needs to consider if a provision for Net Metering can be included in order to address above stated situation. • Though this policy takes care of generation and cogeneration of energy from all probable renewable energy resources, most emphasis is given on the solar projects while ignoring the state potential for other sources.

Title	**Policy Guidelines for Enhancement of Private Participation In The Power Sector**			
Date	2008			
Jurisdiction	Bangladesh	Central		Brahmaputra and Ganges River Basins
Timeframe	2008-2020	**Status**	Existing	
Issued By	Government of Bangladesh (GoB)			

Keywords	Energy, Bangladesh
Web link	http://www.berc.org.bd/images/stories/pdf/policies/policy_guidelines_enhancement_private_participation_the_power_sector_2008_english.pdf
Objectives	(a) GoB desires to (1) promote further private participation in the power sector, harness competition, ensure optimal use and conservation of country's limited natural gas resources; and (2) develop new power plants and rehabilitate some of its Old and Inefficient Power Plants through Public Private Partnership; (b) GoB is keen to develop local private sector entrepreneurship to develop power projects in Bangladesh; (c) GoB intends to allow the private sector to: (1) set up Commercial Power Plants (i) to supply electricity to Large Consumers on mutually negotiated tariffs; and (ii) to supply electricity to the Distribution Licensees at tariffs determined by the Bangladesh Energy Regulatory Commission (BERC); (2) use transmission and distribution lines of Power Grid Company of Bangladesh (PGCB) and Distribution Licensees on a non-discriminatory basis for wheeling of power produced in their existing as well as new Commercial Power Plants; (3) rehabilitate Old and Inefficient Power Plants owned by the Public Sector Power Utilities on Rehabilitate, Own and Operate (ROO) or Rehabilitate, Operate and Transfer (ROT) model ; and (4) develop new Joint Venture Power Plants in partnership with Public Sector Power Utilities.
Highlights	• Augmenting generation capacity is a priority for GoB to meet existing power shortage and demand-growth in future years. To meet this goal, GoB has adopted a combination of measures: large generation capacity addition through the public-sector entities and Independent Power Producers (IPPs); tendering out small power plants on fast-track basis; and encouraging procurement of surplus power from Captive Power Plants (CPPs) and Small Power Plants (SPPs). • Commercial Power Plants: Private Investors can establish and operate Commercial Power Plants subject to provisions under Section 10(a) and 10(b) of these Guidelines. • Distribution Licensees may purchase power from Commercial Power Plants, as needed, subject to approval by BERC, but GOB will not provide any guarantee in favour of any Distribution Licensee. • Private Investors will pay wheeling charge to Public Sector Power Utilities under section 7(a) of these Guidelines. • Rehabilitation of Old and Inefficient Power Plants through PPP subject to the terms and conditions of these Guidelines and BERC Act 2003, Public Sector Power Utilities may allow its Old and Inefficient Power Plants to be available to the Bangladeshi Private Investors on ROO or ROT basis. • Requirements of Joint venture/partnership: Public Sector Power Utilities can form joint venture or partnership with Bangladeshi Private Investors to develop new power plants on BOO Basis. A Special Project Vehicle (SPV) shall be established to implement and operate such projects. • Wheeling of Power: PGCB and all Distribution Licensees shall provide non-discriminatory open access, to their transmission and/or distribution system for use by any Generation Licensee subject to payment of transmission/distribution wheeling charges determined by BERC.
Key Issues	Up to date in total six Independent Power Producer (IPPs) have been established in Bangladesh with a total installed capacity of 1,260 MW. The last IPP plant started commercial operation in the FY 2002/03 (AES Meghnaghat 450 MW combined cycle). Since then no further IPP project was tendered anymore. It seems that the

	Government of Bangladesh has abandoned the current IPP model towards one that is based on joint ventures between private investors and BPDB.

Title	Renewable Energy Policy of Bangladesh		
Date	December 18th, 2008		
Jurisdiction	Bangladesh	Central	[*River Basin*]
Timeframe	Upto coming of new policy	**Status**	The policy will become effective from the date of publication in the official gazette.
Issued By	Power Division Ministry of Power, Energy and Mineral Resources People's Republic Of Bangladesh		
Keywords	renewable energy, peri-urban, solar, wind, biomass, legal framework		
Web link	http://www.berc.org.bd/images/stories/pdf/policies/renewable_energy_policy_of_Bangladesh_English.pdf		
Objectives	The objectives of renewable energy policy are to: (i) Harness the potential of renewable energy resources and dissemination of renewable energy technologies in rural, peri-urban and urban areas; (ii) Enable, encourage and facilitate both public and private sector investment in renewable energy projects; (iii) Develop sustainable energy supplies to substitute indigenous non-renewable energy supplies; (iv) Scale up contributions of renewable energy to electricity production; (v) Scale up contributions of renewable energy both to electricity and to heat energy; (vi) Promote appropriate, efficient and environment friendly use of renewable energy; (vii) Train; facilitate the use of renewable energy at every level of energy usage; (viii) Create enabling environment and legal support to encourage the use of renewable energy; (ix) Promote development of local technology in the field of renewable energy; (x) Promote clean energy for CDM; and (xi) Achieve the targets for developing renewable energy resources to meet five percent of the total power demand by 2015 and ten percent by 2020.		
Highlights	• In Bangladesh efficient utilization of renewable energy resources is yet to assume commercial dimensions and hence rational policy dissemination on renewable energy usage is essential. The renewable energy includes solar, wind, biomass, hydro, geo-thermal, tidal wave etc. • An institution, Sustainable Energy Development Agency (SEDA), shall be established under the Companies Act, 1994, as a focal point for sustainable energy development and promotion, 'sustainable energy' comprising renewable energy and energy efficiency. • SEDA in conjunction with the Power Division of the MPEMR shall be responsible for determining the priorities for renewable energy technology development and program implementation. • Existing renewable energy financing facility shall be expanded that is capable of accessing public, private, donor, carbon emission trading (CDM) and carbon funds and providing financing for renewable energy investments. • To prompt renewable energy in power sector, all renewable energy equipments and related raw materials in producing renewable energy equipments will be exempted from charging 15% VAT. • SEDA or power division of the MPEMR or its assignee until SEDA is formed will fix up the acceptable mechanism to reach the benefits of tax exemption to end users in consultation with NBR. • BERC shall approve the energy tariff in consultation with Power Division of		

	MPEMR/SEDA as per the provision of the BERC Act 2003 if the capacity of renewable energy project(s) is 5 MW or more.
Key Issues	• There is a lack of financial incentives in the policy to encourage private sector investments in RE, market-oriented implementation, and use. • Most of the programs in Bangladesh are government and/or donor-funded, and focus on research and development, rather than product commercialisation. • There is a lack of standardized power purchase agreements for power generation from RETs due to unfavorable utility regulations for RE development. RE is dealt with by various ministries, agencies, and institutions. The policy do not encourage establishment of a good coordination between them is a necessity.

Title	**THE ELECTRICITY ACT OF BHUTAN, 2001.**		
Date	26th July, 2001		
Jurisdiction	Bhutan	Central	Brahmaputra River Basin
Timeframe	This Act shall come into force from such date as the Minister may appoint by notification in a National Newspaper.	**Status**	This Act shall extend to the whole of the Kingdom.
Issued By	National Assembly of Bhutan		
Keywords	Electricity Act, Authority, private ownership, subsidies		
Web link	http://www.bea.gov.bt/wp-content/uploads/2013/12/eact01.pdf		
Objectives	The Electricity Act enables the restructuring of the power supply industry and the possible participation of the private sector, by providing mechanisms for licensing and regulating the operations of power companies. The objectives of this Act include, but are not limited to the following: i) to promote a safe and reliable supply of electricity throughout the country; ii) to enhance revenue generation through export of electricity; iii) to develop the socio-economic welfare of the people; iv) to promote economic self-reliance of the country through the development of a financially viable and reliable electricity industry; v) to promote development of renewable energy resources; vi) to take environmental considerations into account when developing the electricity supply industry; and vii) to promote efficiency in management and service delivery.		
Highlights	• The Bhutan Electricity Authority (BEA) has been established under this Act. The functions of the authority are: • The authority can regulate tariffs for the sale of electricity to customers by Licensees • The Authority shall perform his functions in a manner that: i) is transparent and objective; ii) is fair, reasonable and efficient; iii) is non-discriminatory; and iv) promotes fair competition. • The Authority may regulate: i) tariffs for the sale of electricity to customers by Licensees; ii) charges for connection to, and the use of any distribution system; iii) charges for connection to, and the use of any transmission system; iv) tariffs for generation not regulated by power purchase agreement; and v) other such prices and charges in respect of goods and services provided by Licensees. • No person or entity shall engage in, construction, generation, transmission, system operation, distribution, sale, export or import of electricity without a licence issued		

	under this Act. • The Authority may exempt any person from the requirement to obtain a licence under section 18 where such exemption may include, but is not limited to, the generation of electricity below 500 kilowatt. • A holder of a transmission licence shall provide access to all existing and potential users of the transmission grid on the payment of fees and other charges for grid services as may be approved by the Authority. • Private participants in the electricity supply industry must be licensed as prescribed under Part 3. In the event, the Government decides for private participation in the electricity industry, the Authority shall prepare and promulgate regulations in relation to the establishment, ownership, operations and activities of private participants. • Rural electrification: The Minister shall undertake to promote, support and provide rural electrification programmes through public and private sector participation in order to: i) achieve equitable regional distribution access to electricity; ii) maximize the economic, social and environmental benefits of rural electrification subsidies; iii) promote extension of the grid and development of off-grid electrification; iv) promote renewable energy and v) stimulate innovations within suppliers.
Key Issues	• Some of the provisions of the Act have been superseded by the creation of new institutions.

Title	**Alternative Renewable Energy Policy, 2013**		
Date	8th April, 2013		
Jurisdiction	Bhutan	Central	Brahmaputra River Basin
Timeframe	Till date	**Status**	Implemented
Issued By	Ministry of Economic Affairs, Royal Government Of Bhutan		
Keywords			
Web link	http://www.moea.gov.bt/documents/files/pub0ip10496bv.pdf		
Objectives	The long-term and short-term objectives of the Policy, are as follows: ***a) Long-term objectives:*** (i) Contribute to energy security and broaden the energy portfolio, (ii) Reduce GHG emissions and contribute to climate change mitigation through utilization of available renewable energy potential; (iii) Promote green growth and enhance sustainable socio-economic development; (iv) Develop productive manufacturing capacity in the RE Sector; (v) Develop a framework for Carbon Trading Mechanisms ***b) Short-term objectives:*** (i) Harness the potential of RE resources and adoption of RE technologies in the Country, (ii) Develop RE Master Plan for each of the RE technologies by mapping capacity, generation potential and cost of generation by location across the Kingdom; (iii) Design appropriate tariffs for various RE technologies to offer secure and stable market to investors and project developers with transparent, guaranteed and time-bound incentives provided by the Government; (iv) Enable, encourage and facilitate both public and private sector participation in the development of RE; (v) Set realistic target for RE in the energy-mix; (vi) Support		

	and promote Research & Development in RE technologies with long term potentials as viable energy resources; (vii) Institutionalize the development of national and local capacities and capabilities for enhanced and optimum utilization of RE systems; (viii) Establish the necessary administrative processes, basic physical infrastructure and institutional mechanisms to implement the provisions of this Policy and (ix) Strengthen regulatory functions in the RE sector.
Highlights	• Target: Minimum of 20 MW is to be achieved through a mix of renewable energy technologies by 2025 • Encouraging both state owned and private vehicles to be run on clean and green fuels (20% of the state owned and 10% of the private vehicle fleet to run on clean and green fuels by 2025). • In the process separate roles and responsibilities have been assigned to different departments, agencies and authorities. Following are the details of the same: • *Renewable Energy Development Fund (REDF):* This fund has been created with a primary objective to provide financial assistance for creating a favourable investment climate for RE in the Country. • *Decentralized Distributed Generation (DDG)*: Provide access to electricity in the remote and dispersed villages (un-electrified villages or villages which are not connected to the grid) through RE projects based on this DDG mechanism. • *Stand-alone Projects:* Depending upon the available resources and energy demand of a particular location, Civil Societies, NGOs, Communities, Companies and Individuals based in the country can initiate and undertake the stand-alone projects based on a single or hybrid RE technologies. • *Investment Model*: While the RE projects for electricity generation (except for mini, micro and small hydro) are to be developed under Build, Own and Operate (BOO) model, the micro, mini and small hydro projects are to be developed under the Build-Own-Operate-Transfer (BOOT) model. Investments from private sectors (which include Foreign Direct Investment (FDI)) are allowed in RE projects only as a minority shareholding for development of small hydropower projects, except in micro and mini hydropower projects. • *Promotion of RE:* The Government will provide technical and budgetary supports for organizing publicity and awareness campaigns, seminars, workshops, symposia, business meetings, training programmes, studies, survey, etc. as deem appropriate by the NA.
Key Issues	• This policy should also focus on Mini grids to cater to the people living in remote areas. • Not much emphasis has been given on promoting wind or bio mass energy. Over-reliance on hydro power may lead to serious adverse environmental consequences. • The development of RE projects in Bhutan is limited by a lack of data and feasibility studies on potential, including small hydropower projects (below 25 MW); transmission network connectivity constraints, and financial constraints. The systematic assessment of renewable energy resources in the country, in conjunction with further development of the transmission and distribution infrastructure, and supporting financial mechanisms, would foster a beneficial environment for further investment in energy development, particularly from the private sector.

Title	Bhutan Sustainable Hydropower Development Policy, 2008		
Date	26th June, 2008		
Jurisdiction	Bhutan	Central	Brahmaputra River Basin
Timeframe	From 2008 till date	**Status**	Implemented
Issued By	Department of Hydro Power & Power Systems, Ministry of Economic Affairs		
Keywords	Energy, Bhutan		
Web link	http://www.moea.gov.bt/documents/files/pub5wr1764ka.pdf		
Objectives	Objectives of the Policy : • Mobilize funds and attract investments for accelerated hydropower development • Enhance the revenue contribution to the Roya Government • Contribute to Socio0Economic Development • Ensure domestic electricity supply security and reliability • Contribute towards development of clean energy to mitigate problems related to global warming and climate change		
Highlights	*Institutional Arrangements of the Hydro Power Sector*:		

Sr. No.	Department/Agency/Authorities	Roles & Responsibilities
1	Department of Energy (DoE) [Formed under the Ministry of Economic Affairs]	• Responsible for developing the long term policies and plans • Apex body for implementation of the policy. The body will undertake bidding process • Be the apex body for implementation of this policy • Formulate national policies, plans, programmes and guidelines related to sustainable development
2	Bhutan Electricity Authority (BEA)	• Develop and implement technical, safety and performance regulations, standards and codes for the electricity sector • Develop and implement principles and procedures for tariff setting, and subsidies and economic regulation of domestic tariff • Issue licenses and monitor licensees as per the provision of the Electricity Act in place • Develop and implement Dispute Resolutions Procedures relating to enforcement of Electricity Act, regulations, codes and standards

	3	Bhutan Power Corporation (BPC)	• Responsible for electricity transmission, distribution and supply functions. • BPC also manages and operates some embedded generation units consisting of micro/mini hydro and diesel generating units. • BPC provides transmission access for export of surplus power to India. • This is also the National System Operator.
	4	Druk Green power Corporation (DGPC)	DGPC is responsible for managing all hydropower plants fully owned by
	5	Ministry of Agriculture (MoA)	
	6	National Environment Commission (NEC)	
	• *Target:* To have atleast 10,000 MW of installed capacity by 2020 of Hydro Power Projects • *Projects:* 76 numbers of projects have been shortlisted, 70 run of the river and 6 reservoir schemes. The total estimated capacity of these projects is about 23,760 MW		
Key Issues	• The policy does not address the problem of project delays and cost escalations leading to increasing debt accumulation for the economy. It does not make it mandatory to present audit reports of hydropower projects in the parliament. • The policy suffers from a lack of oversight mechanism on hydropower budgeting and financing. • No provision for periodic review of electricity tariff for exports, allowing private participation in hydropower development, import of expat labour, local employment, project risk assessment and watershed management. • 2008 sustainable hydropower development policy would not hold relevance since the government had mentioned that Bhutan would not be able to tap 10,000 megawatt of hydropower by 2020.		

Title	**Subsidy Policy for Renewable Energy (Code: 2069 BS)**		
Date	February 2013		
Jurisdiction	Nepal	Central	Ganges *River Basin*
Timeframe	Till Date	**Status**	Existing
Issued By	Ministry of Science, Technology and Environment, Government of Nepal		
Keywords	renewable energy, technology, tariff,		
Web link	http://www.aepc.gov.np/docs/resource/rescenter/20130818060043_RE%20Subsidy%20Policy%202013%20-%20English.pdf http://www.aepc.gov.np/old/index.php?option=com_content&view=category&layout=blog&id=88&Itemid=117		

Objectives	The objectives of the subsidy policy will be as follows: • To increase the access to the renewable energy technologies to low income households by reducing the initial upfront cost. • To maximize the service delivery and its efficiency in the use of renewable energy resources and technologies in the rural areas, and to provide opportunity to poor and socially disadvantaged rural households to use renewable energy solutions and minimize regional disparity. • To support use of energy for productive purpose thereby creating rural employment and enhancing livelihood of rural people particularly women, poor and socially excluded group, vulnerable community through increasing their access to renewable energy. • To support rural electrification as well as gradually reduce the growing gap of electricity supply, consumption between rural and urban areas. • To support development and extension of renewable energy market by attracting private sector entrepreneurs. • To support to the envisaged long-term targets of Government in providing rural electrification and energy services. • To encourage rural households in the use of renewable energy services thereby contributing to better health and education conditions of people.
Highlights	• Government of Nepal has been supporting for promotion and development of renewable energy technologies since past two decades with the support from development partners, and private sector. • Need for New Policy: It is felt necessary to make adjustment in the existing subsidy policy for increasing the access to more remote part of the country and to the poorest and socially disadvantaged people. • Considering the subsidy to promote the technologies, and reduce the initial upfront cost so that the low income households can afford the technologies to make the current subsidy policy equitable, inclusive and effective, this Renewable Energy Subsidy Policy, 2013 has been formulated. • The Category "A" Village Development Committees, Category "B" Village Development Committees, and Category "C" Village Development Committees. • The subsidy to micro and mini hydro with capacity of less than 1000 kW or 1 MW will be provided based on the actual power generation and number of actual households connected in the areas where there is no electricity by grid and no immediate plan of the Government for grid extension. • For mini hydro project connected to grid, the household subsidy will be provided based on number of households connected to the plant. The subsidy amount per household to be connected to grid will be Rs. 15,000. • Subsidy will be provided for rehabilitation of damaged mini and micro hydro projects. • Solar Energy technology is one of the important and popular renewable energy technologies in Nepal. Presently, Government of Nepal is promoting small solar home systems, solar home systems, Institutional Solar Systems and some solar thermal systems like solar dryers and solar cookers. • The maximum subsidy amount of 75% of the total systems cost but not exceeding Rs. 1000,000 will be provided for solar photovoltaic system to be installed in public institutions like school, health post. • Subsidy for solar thermal technologies will be provided in the rural areas only. • Biogas has high potential on reducing fuel wood consumption, multiple benefits

	on health/sanitation improvement and positive impacts on the child education improvement. The subsidy is applicable to GGC 2047 Model, the GGC 2047 modified model and the other approved models of various capacities for household/domestic purpose and feasible plants/projects to serve the communities, public institutions, commercial enterprises and municipalities.
Key Issues	• The policy does not promote establishment of an independent regulator with the responsibility to oversee the sector, ensure fairness, and promote transparency and competition • The government is yet to establish institution with the sole responsibility of research and development of RETs that are most compatible for the nation's diverse socioeconomic and geophysical conditions

Title	**The Hydropower Development Policy, 2001:**
Date	15th October, 2001
Jurisdiction	Nepal Central Ganges River Basin
Timeframe	Till Date **Status** Existing
Issued By	Ministry of Water Resources, Government of Nepal
Keywords	Energy, Nepal
Web link	http://www.moen.gov.np/ http://www.moen.gov.np/pdf_files/hydropower_development_policy_2001.pd
Objectives	Hydropower shall be developed to achieve the following objectives: • To generate electricity at low cost by utilizing the water resources available in the country. • To extend reliable and qualitative electric service throughout the Kingdom of Nepal at a reasonable price. • To tie-up electrification with the economic activities. • To render support to the development of rural economy by extending the rural electrification. • To develop hydropower as an exportable commodity.
Highlights	Some of the key extracts, which summarizes the strategies ass mentioned in the policy are as follows: • To extend hydropower services to the rural economy • To create a conducive environment for the involvement of private sector in the process of development of Hydro Power • To implement small, medium, large and storage projects for hydropower development • To pursue a strategy of bilateral or regional cooperation in the hydropower development sector • To adopt a broader perspective on national development in the context of macro-economy in developing and managing hydropower • *Maximum utilization of local resources and means*: Foreign entrepreneurs shall be encouraged to be affiliated with local organizations as the cost of hydropower decreases if the project is developed through the domestic construction entrepreneurs and consultants. The policy directs the person(s) licensed to build or operate a hydropower, to utilize Nepalese labour (giving a priority to utilize local labour), skills, means and resources to the maximum extent possible • *Export of Electricity*: Electricity shall be exported by identifying export oriented

	projects and such projects are to be developed by the private sector • *Licenses*: Licenses are not required for establishing Hydro Power Projects upto 1 MW. *Internal Electricity Market*: The off-grid Hydro Power Projects of capacity upto 1 MW can sell and distribute the power by determining the tariff rate on its own. The tariff structure should be such to allow consumption of additional electricity within the country. Provisions for Time of Day (ToD) tariff and seasonal tariff should be there for Demand Side Management. *Awareness Generation*: The policy has provisions to generate awareness among consumers to promote usage of energy conserving electrical equipment. In addition to mitigation of adverse environmental impacts likely to result from the operation of hydropower projects, appropriate provision shall be made to resettle the displaced families. • Emphasis shall be given on mobilization of internal capital market for investment in power sector. • Electrification of remote rural areas shall be encouraged by operating small and mini hydropower projects at the local level. • Rural electrification shall be extended in order to make electric service available to as many people as possible. • Unauthorized leakage of electricity shall be controlled. • It shall be encouraged to utilize the electric power available during low demand in the sectors such as rural water supply, irrigation, industry, tourism, etc.
Key Issues	• The Hydropower Policy 2001 does not stipulate organizational arrangements for distributing royalties. Transparent royalty management and strong monitoring and enforcement, if done sincerely, would improve the impact of royalties and increase support amongst local people. • The formation of regulatory body to look after the power sector has not yet been formed. • The policy should take into consideration that not all Village Development Councils (VDCs) benefit in the same manner.

****Links of Other Electricity Regulation and Acts in Nepal**

ELECTRICITY ACT, 2049: http://www.nea.org.np/images/supportive_docs/Electricity%20Act.pdf

Nepal Electricity Authority Community Electricity Distribution Bye Laws, 2060: http://www.nea.org.np/images/supportive_docs/Community%20Electricity%20Distribution%20Bylaw.pdf

Electricity Leakage Control Act 2058: http://www.nea.org.np/images/supportive_docs/Electricity_Leakage_Control_Act_2058-nepali.pdf

ELECTRICITY REGULATION, 2050 (1993) http://www.nea.org.np/images/supportive_docs/Electricity_Regulation_2050-english.pdf

Title	National Power Policy		
Date	2013		
Jurisdiction	Pakistan	Central	Indus River Basin
Timeframe	2013-2017	**Status**	Existing
Issued By	Ministry of Water & Power, GOVERNMENT OF PAKISTAN		
Keywords	power generation, demand-supply gap, strategy, subsidy		
Web link	http://www.ppib.gov.pk/National%20Power%20Policy%202013.pdf		
Objectives	Government of Pakistan has set the following nine goals: • Build a power generation capacity that can meet Pakistan's energy needs in a sustainable manner. ii. Create a culture of energy conservation and responsibility • Ensure the generation of inexpensive and affordable electricity for domestic, commercial, and industrial use by using indigenous resources such as coal and hydel. • Minimize pilferage and adulteration in fuel supply; • Promote world class efficiency in power generation; • Create a cutting edge transmission network; • Minimize inefficiencies in the distribution system; • Minimize financial losses across the system; • Align the ministries involved in the energy sector and improve the governance of all related federal and provincial departments as well as regulators		
Highlights	• Pakistan has set key targets in terms of the demand-supply gap, affordability, efficiency, financial viability and governance of the system. The extent to which the policy can meet these targets will measure the success of the policy and the nation's ability to overcome the key problems afflicting the power sector. • Supply Demand Gap: the target of government is to decrease supply demand gap from 4500 - 5000 MW today to 0 by 2017 • Government also targeting on affordability: for this to Decrease cost of generation from 12c / unit today to ~10c / unit by 2017 • Efficiency: Decrease transmission and distribution losses from ~23-25% to ~16% by 2017 • Financial Viability and Collections: Increase collection from ~85% to 95% by 2017. • Governance: Decrease decision making processing time at the Ministry, related departments and regulators from long to short durations • The process of policy and strategy formulation is informed by the following organizing principles: (i) efficiency, (ii) competition, and (iii) sustainability. - Efficiency is the cornerstone of developing competitiveness. The principle of efficiency will be predicated on three pillars: merit order, transparency / automation, and accountability. - Competition creates the edge essential for developing a robust energy cluster. The principle of competition will be built on three pillars: infrastructure development, up front tariff and competitive bidding, and key client management. - Sustainability is the underpinning of long term transformation. The principle of sustainability will be grounded on three pillars: low cost energy, fair and level playing field, and demand management. • Altering the fuel mix towards less expensive fuels will lead to low cost energy. Investments required for the low cost fuel mix will necessitate rationalization of the electricity tariff. The strategy has been prioritized on the basis of this regulation. By 2017, the power demand gap will be balanced with the generation and supply of power. • Fairness will be ensured by protecting the poor and cross-subsidizing their		

	consumption from the affluent. A level playing field will be created by providing power at comparable prices to all industrial users.
Key Issues	• The increased dependence on expensive thermal oil power generation has also given rise to the phenomenon of circular debt in the energy sector, in terms of which slippages in bill payments (particularly on the part of public institutions) trigger off a chain of delayed payments for imported furnace oil, natural gas or other inputs to the thermal generation system. The policy does not have any provision for ensuring smooth operation of power plants and optimum capacity usage. • Energy subsidies constituted 95% of the subsidies that the government provided in the budget for the last fiscal year (2012-13), amounting to 13.5% of current expenditure. The policy must take this into consideration

Title	**Policy for Development of Renewable Energy for Power Generation**		
Date	2006		
Jurisdiction	Pakistan	Central	Indus River Basin
Timeframe	2013-2017	**Status**	Existing
Issued By	Ministry of Water & Power, GOVERNMENT OF PAKISTAN		
Keywords	Energy Security, renewable energy, transportation		
Web link	http://www.aedb.org/Policy/REpolicy.pdf		
Objectives	The four key strategic objectives for developing Pakistan's renewable energy resources include: • Energy Security: Mainstreaming of renewable energy and greater use of indigenous resources can help diversify Pakistan's energy mix and reduce the country's dependence on any single source. • Economic Benefits: When properly assessed for their externalities, renewable energy options can become economically competitive with conventional supplies on a least-cost basis. • Social Equity: Pakistan's present low per-capita consumption of energy can be elevated through greater RE use. Environmental Protection: Local environmental and health impacts of unsustainable and inefficient traditional biomass fuels and fossil fuel-powered electricity generation can be largely circumvented through clean, renewable energy alternatives. The specific goals of the renewable energy policy regime to be evolved in order to systematically meet these objectives, of which these guidelines are the first step, would be to: i. Increase the deployment of renewable energy technologies (RETs) ii. Provide additional power supplies to help meet increasing national demand. iii. Introduce investment-friendly incentives, and facilitate renewable energy markets to attract private sector interest in RE projects, v. Devise measures to support the private sector in mobilizing financing and enabling public sector investment in promotional, demonstrative, and trend setting RE projects. v. Optimize impact of RE deployment in underdeveloped areas by integrating energy solutions with provision of other social infrastructure vi. Help in broad institutional, technical, and operational capacity building relevant to the renewable energy sector. vii. Facilitate the establishment of a domestic RET manufacturing base in the country		
Highlights	For the purposes of this policy statement, 'renewable energy' (or RE) includes the following technologies: • Small hydro of 50 MW or less capacity		

	• Solar photovoltaic (PV) and thermal energy for power generation • Wind power generation. • Other RE power generation technologies—such as those based on municipal waste and landfill methane recovery, anaerobic or pyrolytic biomass gasification, co-firing or cogeneration utilizing agricultural crop residues, biofuels, wave, tidal, geothermal energy, and fuel cells—are also relevant to current and future renewable energy use in Pakistan. However, these are not dealt with in this document. • Renewable energy development in Pakistan is conceived under a phased, evolutionary approach constituting a strategic policy implementation roadmap. • The initial short term phase will involve lenient policy measures and incentives in order to attract investment in this relatively new business area, remove existing barriers to project implementation, and 'hand-hold' reasonable-sized pioneering projects through to successful commercial operation. • As experience, business confidence, and domestic industry capacity grows, it is planned that the policy environment will graduate into a more competitive and deregulated RE market environment, with significantly expanded scale of activities envisioned in the medium and long terms.
Key Issues	• A lack of focus on a selection of key renewable resources; • The policy doesn't provide a detailed account of issues relating to social equity—such as equal rights and access for all citizens to modern energy supplies, improved human development indicators, poverty alleviation amongst deprived sections of society, and reduced burden on rural women for biomass fuel collection and use. • It fails to see why there has been large time and cost overruns in case of some projects. The cost-plus mechanism that does not guarantee the developer a revenue scheme. • Standard power purchase agreements are not bankable; • the current requirements to file a tariff petition and undergo standard tariff procedures that are not suitable for small-scale renewable energy projects;