B.PAC
Let's Be Better

Expert Roundtable Discussion on

My Bengaluru, My Manifesto

Energy

ELECTION HABBA 2023
Electoral Awareness Campaign by B.PAC

Saturday, March 25, 2023, | 4:00 PM to 5:30 PM | Zoom


MY BENGALURU
MY MANIFESTO
SWALPA ADJUST MADBEDI

Agenda

- Introduction - **Election Habba**
- Current **Energy Scenario** in State and city
- Analysis - **Manifestos and Budgets** by ruling political parties
- **Recommendations** to improve Energy/Power sector
- Discussion

Outcome:

- Recommendations
- Short term and long-term strategy to achieve recommendations
- Manifesto will be shared with political parties
- Continuous advocacy efforts

Introduction - Energy

- B.PAC's **Election Habba** initiatives – To spread **awareness about electoral procedures**
- KA General Election | April 2018

Current Energy Scenario in State and city

Energy sector Karnataka

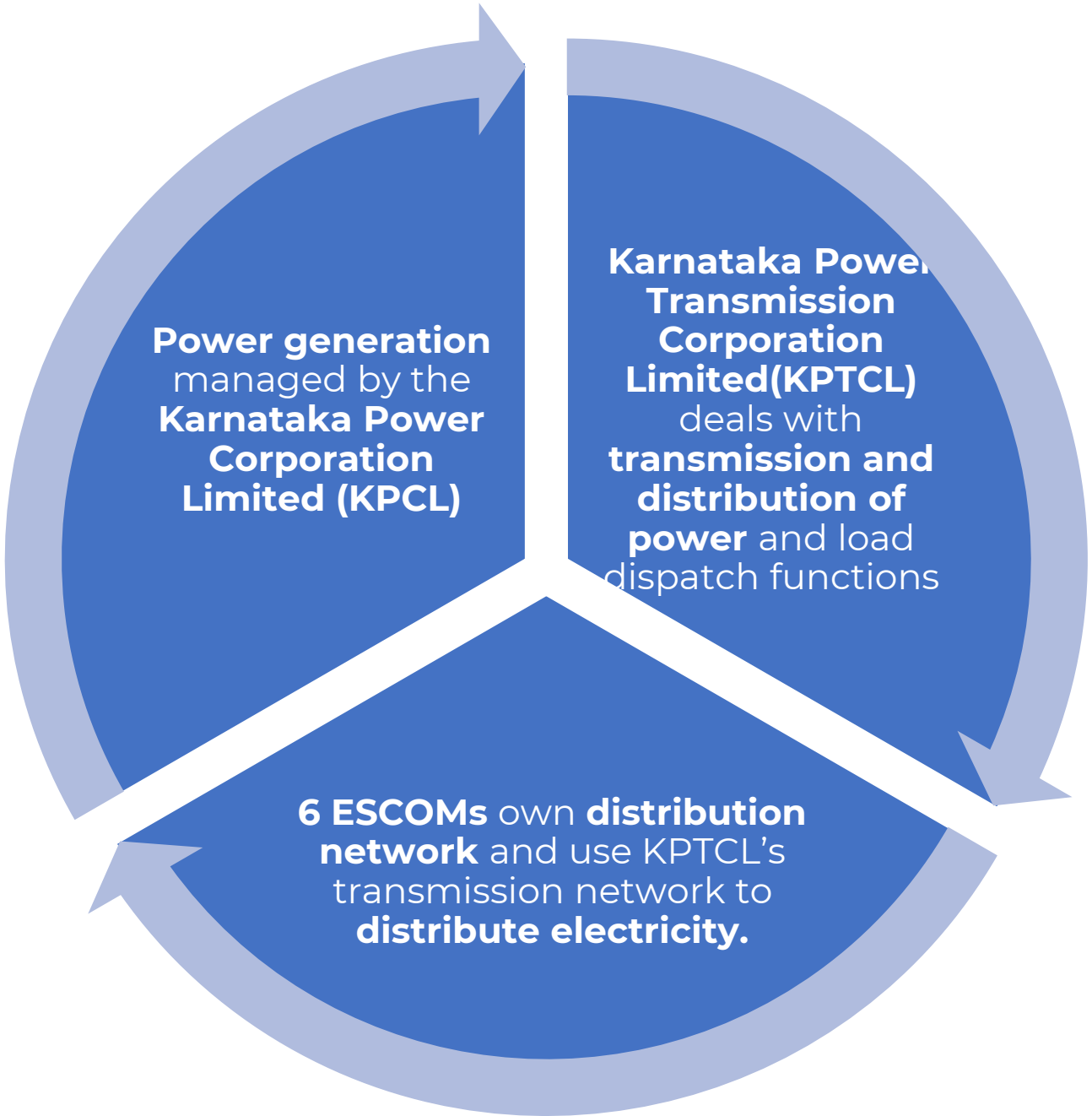


Table 10.1 : Progress in Power Sector

Source	Units	2018-19	2019-20	2020-21	2021-22	2022-23 (Upto Nov-22)
A. Installed Capacity						
1. Public Sector						
a) Hydel	MW	3,680.00	3,681.00	3,681.00	3,681.00	3681.00
b) Wind energy	MW	5.00	5.00	5.00	5.00	5.00
c) Thermal	MW	5,020.00	5,020.00	5,020.00	5,020.00	5,020.00
d) Diesel plants	MW	0	0	0	0.00	0.00
e) Solar PV plant	MW	34	34	34	34.00	34.00
Total		**8,739.00**	**8,740.00**	**8,740.00**	**8,740.00**	**8,740.00**
f) Jurala Hydro	MW	117.00	117.00	117.00	117.00	117.00
2. Private Sector						
a) IPP Thermal (including small thermal-conventional)	MW	2,183.30	2,192.30	2,192.30	2197.30	2197.30
b) Mini Hydel	MW	853.46	903.46	903.46	903.46	903.46
c) Wind energy	MW	4,754.34	4,814.34	4,962.34	5144.14	5218.39
d) Co-generation & Biomass	MW	1,837.19	1,870.19	1,870.19	1870.19	1870.19
e) Solar (including solar roof top)	MW	6,093.38	7,266.19	7,355.01	7556.30	7843.89
Total		**15,721.67**	**17,046.48**	**17,283.30**	**17671.39**	**18033.23**
3. Central Generating Station Allocation	**MW**	**4,158.00**		**4,865.00**	**4865.00**	**4744.35**
Total Installed Capacity		**28,740.67**	**30,061.48**	**31,005.30**	**31,393.39**	**31,634.58**
B. Electricity Generation(Net)						
a) Hydel (KPCL)	MU	11,857.65	13,622.00	12,232.53	13582.86	8681.16
b) Thermal(KPCL)	MU	11,861.03	11,444.12	6,366.88	17143.42	7683.23
c) Wind	MU	9,839.14	10,050.70	9,434.92	9376.45	6061.06
d) Solar PV plant	MU	6,797.83	8,026.02	8,888.70	9281.34	4554.15
e) Mini Hydel	MU	1,677.54	1,816.45	2,140.12	2346.35	1385.87
f) Co-gen and Bio-Mass	MU	2,500.56	2,383.20	2,777.98	2976.83	722.31
g) Private sector	MU	6,650.56	4,589.89	2,918.21	2548.04	1280.36
Total		**51,184.31**	**51,932.38**	**44,759.34**	**57,255.29**	**30,368.14**
C. Electricity imports						
a) Central projects	MU	23,205.01	22,665.07	23,060.76	18241.82	8100.11
b) Other States Short Term	MU	965.83	0			
Total	**MU**	**24,170.84**	**22,665.07**	**23,060.76**	**18241.82**	**8100.11**
Total Electricity supply	**MU**	**75,355.15**	**74,597.45**	**67,820.10**	**75,497.11**	**38,468.25**

Source: KPCL, KPTCL, KREDL and PCKL.

YTPS not included in net generation

Note: Capacity of 0.82 MW has been added twice in the year 2010-11. The same has been rectified during December-2018 and the Capacity is deducted in the cumulative Capacity.

Installed **generation capacity** both in the public sector and private sector including the State's share in the Central Generation Station (CGS) upto November 2022 is **31634.58MW.**

Installed capacity in the **public sector** is 13,601.35MW (including CGS allocation) and the private sector's share is **18033.23MW.**

The State has **added 361.84MW of Generating capacity in renewable energy sources** during the FY 2022-23 (Upto Nov-22)

Table 10.7: Energy sales, average tariff and average cost of power supplied by ESCOMs.

ESCOMS	Energy sales(MU)		Average tariff (Rs./kWh)		Average cost (Rs./kWh)	
	2021-22	2022-23	2021-22	2022-23	2021-22	2022-23
	(Actuals)	(KERC approved)	(Actuals)	(KERC approved)	(Actuals)	(KERC approved)
BESCOM	26684.73	29396.63	7.85	8.70	8.42	8.70
MESCOM	5168.52	5387.54	7.65	8.13	7.94	8.13
HESCOM	11761.98	12082.25	7.46	8.31	8.00	8.31
GESCOM	7827.30	7921.91	7.51	8.11	7.74	8.11
CESC	6684.20	6911.06	7.29	8.11	7.61	8.11
Hukkeri	291.27	266.50	6.32	6.51	6.26	6.51
Total	**58418.00**	**61965.89**	**7.64**	**8.42**	**8.11**	**8.42**

Table 10.8: Subsidy Released by the State Government

Year	Subsidy released (Rs. in Crs)	Remarks
2019-20	11,245.00	
2020-21	11,250.00	
2021-22	16,944.93	Includes previous subsidy arrears of Rs.5,500.00 Crs&Covid relief subsidy of Rs.68.93 Crs.
2022-23 (Upto Nov-22)	11,547.41	Includes FAC subsidy Rs.100.02 Crs& Covid relief Subsidy of Rs.92.59 Crs.

Source: Energy Dept.

- **Government unpaid subsidies and unpaid dues by Govt bodies to ESCOMs**
- The **government dues to ESCOMs create negative impact on revenue collection** and furthering the vicious cycle of not paying the power Generators who are forced to borrow to maintain operations or **burden the consumers through increase in the power tariff.**
- **Unpaid subsidies from the government to ESCOMS** is accumulated at INR. 3,526 Cr and unpaid bills by various government departments is accumulated to INR. 6,600 Cr during 2022 | **BESCOM trade receivables at INR. 10,550 Cr**
- **ESCOMs to calculate the government dues and place a demand with government to pay and not burden the consumers** for no fault of theirs. We also request that this additional **cost be calculate every 3 months and this information be placed in the public domain.**

BESCOM FY 22-23

B.PAC has been presenting detailed objections to the Commission for 8 years in public interest after extensive research and analysis

#	Particulars	UoM	A	B	C=B-A	
			FY 12	FY 22	Incr/Decr	%
1	Conusmers	Lakhs	80	133	54	67.3%
2	Energy Sales	MU	21,030	26,685	5,655	26.9%
3	HT Sales	MU	7,626	7,461	-165	-2.2%
4	DTCs	Nos	1,61,905	4,55,604	2,93,699	181.4%
5	Distribution Loss	%	14	11	-3	3.2%
6	HT Lines	Ckt Km	75,074	1,24,785	49,711	66.2%
7	LT Lines	Ckt Km	1,50,105	1,79,341	29,236	19.5%
8	Total Employee Strengeth					
9	Sanctioned	Nos	16,902	24,639	7,737	45.8%
10	Working	Nos	10,574	14,911	4,337	41.0%
11	Revenue Demand	Rs in Crs	9,405	21,606	12,201	129.7%
12	Revenue Collection	Rs in Crs	8,851	20,712	11,861	134.0%
13	Revenue Expenditure A/Cs)	Rs in Crs	9,607	22,070	12,463	129.7%
14	Power purchase cost	Rs in Crs	5,860	17,617	11,757	200.6%

- Growth in BESCOM Revenues continue to be tardy in spite of rapid urbanisation of the city and growing demand for power
- Power Purchase cost to Revenue remains outrageously high at 95.78 % worsened significantly from 86.2% in FY 17 and with no visibility for improvement in PPC
- HT consumers have been steadily moving away to open access where they can get power at more competitive rates.
- Agricultural consumption continues to grow at an astonishing pace signifying theft of power.

Way forward – KA Economic Survey 22-23

- To **rectify the balance sheet of state power utilities** by **rate-design reforms, plugging revenue leakage, squaring cumulative losses, and issuance of bonds.** Additionally, quality-rated distribution transformers are required to reduce the length to ensure optimum efficiency.
- need to **promote Utility business model** to **transform from 'generation sales' to 'mediator for sales' for sustenance in the long-term**. This would keep the consumers connected to the distribution networks to transact their surplus energy.
- Timely **formulation and implementation of action plans**.
- Re-assessment of **cross-subsidies by cost-effective tariffs and regulatory innovations** as electricity to evolve from a public utility model to a product/commodity model.
- Change management programmes of **local power distribution as well as reactivation of the franchisee system** to be promoted by involving local youths under Skill India Mission
- Network strengthening and **using efficient irrigation pumpsets**
- There is need to **regulate farm power by limiting the number of wells per unit area and checking misuse of subsidy.** Also, going forward there is need for increasing testing labs for solar panels as well as innovation labs such as YES SCALE (aggrotech, cleantech and smart cities) as alternate source of energy.
- **T&D loss, AT&C loss and electrical accidents** reduction and consumer friendly power supply

Analysis - Manifestos and Budgets by ruling political parties

Political Parties 2018 Election Manifesto Analysis

BJP	INC	JD(S)
• Double the production of electricity **capacity of the State to 20,000 MWs** • **I**ncrease the **state's solar power production capacity by 4,000 MWs.** • Establish a **mega solar power complex in the state.**	• Set higher **Renewable Purchase Obligation targets** for the state • Mandate adoption of **Rooftop Photovoltaic systems in government buildings** • Analyse feasibility of **solar-powered agricultural feeders** • Explore **renewable energy integrated storage options for pumping** • Assess power generation potential from **Waste to Energy generation** • Improve **grid planning** to ensure **seamless integration of Renewable Energy, Energy Efficiency, Distributed Renewable Energy (DRE) and Electric Vehicles** • Establish **EV, charging infrastructure and battery manufacturing units** • Focus on **capacity building in rural areas, particularly, training in operations and maintenance (O&M) services**	

State Budget 2019-20

Para No	Budget Speech	Action Taken Report
268	Our Government has come up with various new schemes for the overall development of farmers and we have an intention of continuing the existing schemes with improvisation. In this direction, the **existing subsidy amount of Rs.9,250 crore for the year 2018-19 has been increased to Rs.11,250 crore for the year 2019-20 towards free schemes like RE subsidy for Irrigation Pump set, Bhagya Jyothi, Kuteera Jyothi.**	It is an ongoing scheme G. O. No. Energy 01 PSR 2019, dated: 09-04-2019 has been issued**. In the year 2019-20 Budget, Subsidy amount of Rs.11250.00 crores has been provided towards free schemes like RE Subsidy for Irrigation Pumpset, Bhagya Jyothi, Kuteera Jyothi, out of which subsidy amount of Rs.8201.87 crores has been released to the end of December 2019.**
269	Karnataka State is in **the first place in the production of renewable energy. The existing capacity is 12,747 M.W. Karnataka State has also secured the first place in the country in production of Solar Energy. Government has taken all steps to produce 2100 M.W solar energy** at the end of the next year. In the background, the Government is pushing for production of roof-top solar energy.	It is an ongoing scheme. G.O. No. Energy 01 PSR 2019, dated: 09-04-2019 has been issued. **During December-19, 102.00 M.W. capacity Renewable Energy Projects have been commissioned. Including 7276.71 M.W. commissioned capacity of Solar projects, total installed capacity of renewable energy projects is 14863.20 M.W.** To encourage Solar Roof Top, Karnataka Electricity Regulatory Commission in Tariff Order dated: 01.08.2019, **enhanced the maximum SRTPV capacity from 1 M.W. to 2 M.W.**

State Budget 2019-20

Para No	Budget Speech	Action Taken Report
270	In view of **additional production of this solar energy and to ease out the difficulties** being faced by the farmers, power supply for pump sets will be provided during day time.	It is an ongoing scheme. G.O. No. Energy 01 PSR 2019, dated: 09-04-2019 has been issued. **7 hours of continuous 3 phase power supply is already being arranged to Irrigation pumpsets where ever there is technical feasibility .**
271	To improve the **quality of power being supplied to farmers, 40,000 new transformers** will be installed.	It is an ongoing scheme. G. O. No. Energy 01 PSR 2019, dated: 09-04-2019 has been issued. **During the year 2019-20 (upto December 2019), 36,120 Transformers have been installed for Irrigation Pumpsets of farmers under various schemes**.

State Budget 2020-21

Para No	Budget Speech	Action Taken Report
206	Karnataka Power Corporation Limited in partnership with BBMP has proposed to **establish a new "Waste to Energy" power generation centre of 11.5 mega watt capacity in Bidadi of Ramanagara District at an estimated cost of Rs.210 crore. 70 million units of power will be generated annually in this project**. This would help management of segregated waste generated in Bengaluru city.	LOA issued for **EPC works at Rs.240.00 Crores to M/s. Isgec company and Work Order is issued.** Civil works are under progress. Permission has been obtained from the Karnataka State Pollution Board to start the project. **KPTCL has approved the creation of a transmission line of 66 K / V UG cable at Bidadi substation to 220 / 66 / 11 kv lodging power station generated by the Solid Waste Power Plant.** To create route survey has been carried out.there is technical feasibility .

State Budget 2021-22

Para No	Budget Speech	Action Taken Report
222	KREDL has proposed to **establish 500 MW Solar Power Park in 1,551 acres owned by Power Company of Karnataka Ltd. (PCKL) at Firozabad in Kalaburgi Taluk** through private developers for sale of energy outside the State through Inter State Transmission System (ISTS) network.	KREDL is constructing the said Solar Park. **The Park will be developed with a CFA of 30% of the project cost provided by MNRE - GoI and thebalance fund will be raised from the solar project developers** who will be allocated the solar projects in the proposed solar park for development of solar power projects. **MNRE has issued in-principle approval for the establishment of the said park on 26.04.2021**
223	**Renovation and modernisation of 400/220 KW sub centres of KPCL with replacement of equipments has been taken up** and the first phase is completed. Second phase will be started at a project expenditure of Rs.100 crore after obtaining the permission from the central power ministry.	As per PSDF guidelines, **tripartite agreement has been signed by KPCL NLDC and Additional Chief Secretary, Energy Department, Government of Karnataka** and has been sent on 07.06.2021.
224	It has been proposed to **automate electricity activities, metering and audit functions of the KPTCL under Central Government's SAMAST system** and for the co-ordination of open access electricity transactions and billing reports through the internet.	As per the recommendations of **FOR (Forum of Regulators) and directives of KERC, implementation of SAMAST (Scheduling, Accounting, Metering & Settlement of Transactions) was taken up by KPTCL.**

State Budget 2021-22

Para No	Budget Speech	Action Taken Report
225	Our Government will encourage **research pertaining to solar electric devices and its technology.**	KREDL vide Letter No KREDL/09/5- 2021/1489-92, dated:03.04.2021 has **requested IISC, IIT Dharwad, IIM and CPRI to start "Renewable Energy Research Chair" to conduct research on solar electric equipment's and technology.**
226	To encourage the **usage of electric vehicles and to reduce the air pollution in the state, 1,000 charging centres for electric vehicles will be established** under public –private partnership.	The **revised action plan has been prepared with primary focus of all district with smart cities, Mysuru as a major city and Bengaluru Rural District. A total of more than 600 EV Charging Stations has been mapped for these 08 districts**.
227	A **1,000 MW project of Pumped Hydro Storage Plant will be implemented on the basis of private investment of Rs.4,000 crore for the continuous supply of clean energy based electricity**.	PCKL invited tenders (Second-call) on 25.03.2021 in e-procurement portal of GoK for **engagement of consultants for preparation of Standard Bidding Document to invite tenders for Hydropumped storage solution on PPA and Non-PPA models in Karnataka. Successful bidder M/s. Price Water House Coopers Pvt. Ltd. has been awarded the work order on 31/5/2021.**

State Budget 2022-23

Para No	Budget Speech	Action Taken Report
226	**'Belaku' programme envisages providing electricity connection to about 1.65 lakh un-electrified households in the State. 98,448 household have already been provided with electricity** and the remaining households will also be taken up for electrification.	It is an ongoing scheme, G.O No: Energy 606 VSC 2021, dated:29.09.2021 and G.O No: Energy 169 VSC 2022, dated:05.04.2022 has been issued. In the **lines of DDUGJY and Soubhagya schemes, un-electrified poor households will be provided electricity connection** based on Ration card, Aadhaar card and other such documents. **The electricity supplying companies will utilise their CAPEX to provide electricity connection to such un-electrified households.**
227	For the first time, our **Government has constituted an expert committee to carry out comprehensive study of reconstitution, asset creation, economic autonomy, and consolidation of resources of electricity supply companies.**	G.O No: Energy 65 EEB 2022, dated:03.02.2022 has been issued. Government has constituted a **single-man committee, under chairmanship of Sri.G.Gurucharan IAS (Retd.) to carry out comprehensive study. The committee has submitted its report and action is being taken as per the report.**
228	**15 industrial areas of 5 districts are facing interruptions in electricity supply. They have been identified and immediate action will be taken by KPTCL and ESCOMs** to redress this.	Letter No: Energy 157 VSC 2022, dated:30.03.2022 has been issued **instructing KPTCL/ BESCOM/ MESCOM/ GESCOM to implement this programme.**

State Budget 2022-23

Para No	Budget Speech	Action Taken Report
229	To increase the **renewable energy source of the State, it is proposed to implement 2000 mega-watt capacity Underground Storage Centre in the Sharavathy basin at an estimated cost of Rs.5391 crore.**	Detailed Project Report (DPR) of Sharavati Pumped Storage Project is completed. The Board of Directors of **Karnataka Power Corporation Limited constituted a sub- committee in the Chairmanship of Additional Chief Secretary to Government, Department of Energy, Members consisting of Managing Director, KPCL and Managing Director, KPTCL to review the DPR of the proposed project. Sharavati Pumped Storage Project will be implemented after getting approval of DPR from Board of Directors of Karnataka Power Corporation Limited and after obtaining statutory approvals** from Department of Forest and Environment and others.
230	It is proposed to set up **64 new sub-stations through KPTCL to facilitate continuous and quality supply of electricity.**	Letter No: Energy 157 VSC 2022, dated:30.03.2022 has **been issued instructing KPTCL/ BESCOM/ MESCOM/ GESCOM to implement this programme.**
231	About **10,000 solar based irrigation pumpsets will be established through Karnataka Renewable Energy Development Limited (KREDL) at a cost of Rs.227 crore** under PMKUSUMA component-B scheme.	Approval has been accorded vide G.O No: Energy 441 VSC 2021, dated:19.03.2022 for **establishment of solar based irrigation pump sets through Karnataka Renewable Energy Development Limited (KREDL) under PMKUSUMA component-B scheme.**

State Budget 2022-23

Para No	Budget Speech	Action Taken Report
232	The Government of Karnataka intends to formulate a **Green Hydrogen Policy in collaboration with the Central Government's ambitious "National Green Hydrogen Mission". The Government will also explore the possibility of Green Hydrogen pilot project through PPP model.**	In order to join hands with the ambitious "National Green Hydrogen Mission" policy of the Central Government, action is being taken at the government level to **create a committee of skilled experts in the light of the State Government's formulation of a Green Hydrogen Policy and action is being taken to hold knowledge exchange and brainstorming meetings with stakeholders.** After the said meeting, steps will be taken to implement green hydrogen project in PPP Model.
233	It is proposed to explore the **possibility of installing 5000 MW capacity hybrid renewable energy park in identified 8 districts under the PPP model.**	KREDL has been directed to **prepare DPR for implementation of 5 GW capacity hybrid park project** in the state vide letter No.Energy 70 NCE2022, dated:19/3/2022.
234	The existing **SCADA system will be upgraded with an estimated cost of Rs.99 crore, to help Real Time Operation control system of electric grid**. It is proposed to upgrade the existing **Distribution Automation System coming under the purview of BMAZ of Bangalore city** with an estimated cost of Rs.388 crore.	KPTCL- SCADA: **Prior to calling the tender, tender invitation proposal has been sent to the scrutiny committee**. Committee has sought some additional information in this regard.

Recommendations to improve Energy sector

Citizen Demands – Net Zero Energy by 2030

1. Universal, Equitable **access** to energy and reliability
2. Energy **efficiency** and performance optimization
3. **Renewable** energy
4. Carbon neutral **economy**
5. Energy **resilience**
6. Energy **governance and performance management -** Policies and political commitments (state's policies to push for power sector decarbonisation)

SDG 7 aims at ensuring access to affordable, reliable, sustainable, and modern energy for all

Universal, Equitable access to energy and reliability

Current Status

- 98%of Bengaluru urban district is electrified
- Aiming for 24x7 Power for All - universal energy access by 2025
- Schemes to subsidize LPG cooking gas, rooftop SPV, etc.
- Renewables and hydel are least expensive sources

Recommendations

- Achieve 100% access via grid connections, or offer clean decentralized solutions
- Affordability of pricing - reducing inefficiencies in DISCOMs and increasing purchase of low-cost renewables
  - Technical - T&D losses, poor transformers, etc. Admin - billing inefficiencies, etc
- Ensure reliability and quality - record and monitor grid interruptions and create plan to reduce interruptions

Energy efficiency and performance optimization

Current Status

- India's total share of **global CO2 emissions: 6.4%**
- **India's per capita emissions are 1.6 tonnes of CO2,** well below the global average of 4.4 tonnes.
- Energy and emission intensities of **India's gross domestic product (GDP) have decreased by more than 20% over the past decade** - owing to scaling LEDs, tradable energy efficiency certificates, and other initiatives..

Recommendations

"Front Runner" level rating in the 2024 State Energy Efficiency Index. In the immediate term, focus on:

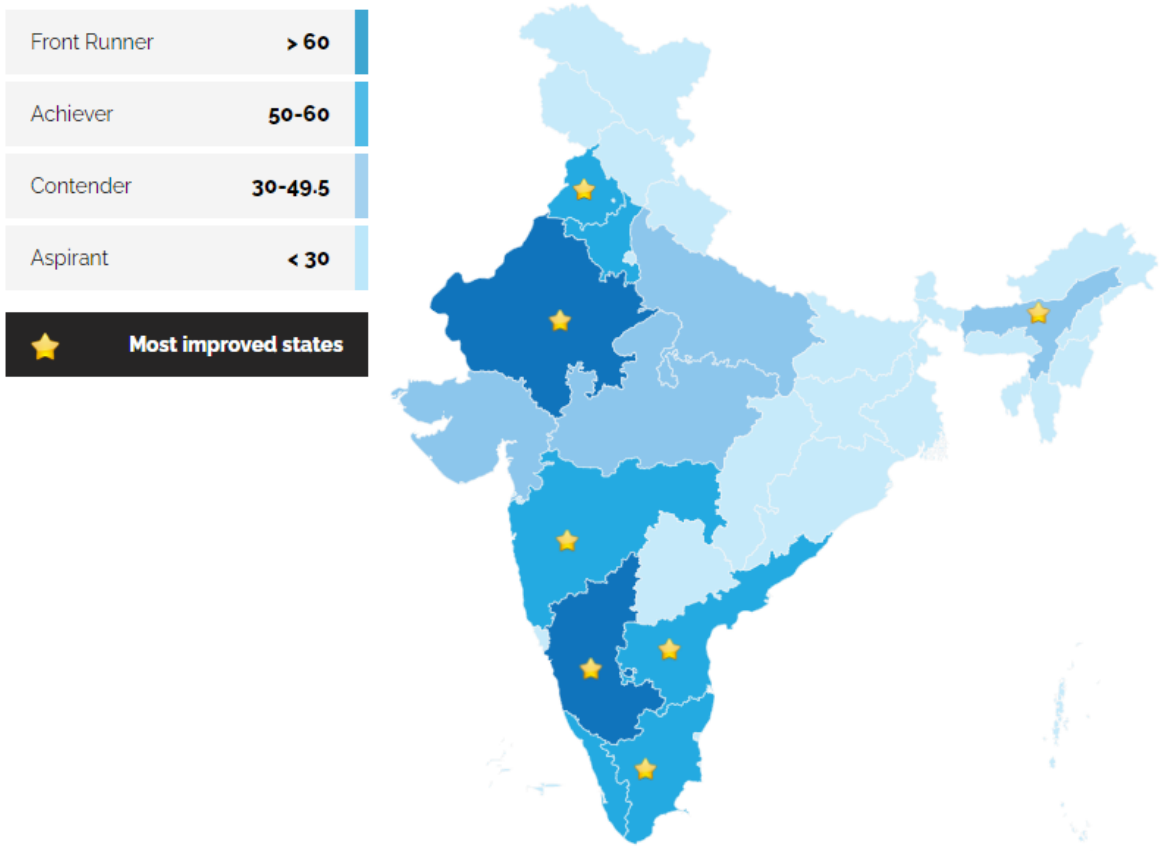
- Energy efficient buildings
- Efficient industry, and
- Efficient municipality level infrastructure
- Bengaluru must **establish the goal of 40% more energy efficiency** above 2020 baseline by 2030 in the following key sectors - **buildings, industry, and municipal infrastructure (lighting and water pumping).**

Energy efficiency and performance optimization

Recommendations

- Grid level - Minimize transmission losses by half of 2020 levels to 8%
- City-sectoral - energy efficient street lighting, water pumping, IP sets
- Buildings -
  - Benchmark and baseline
  - Revised KECBC - utilize zEPI pathway
  - All public buildings to comply
- Fixtures and appliances - popularize and increase demand Industry
- Perform, Achieve, Trade (PAT) expansion and enforcement
- KA Energy Conservation & Energy Efficiency Policy 2022-27

Karnataka is most energy efficient state in India



Source: https://stateenergyefficiencyindex.in/

Renewable energy

Current Status

National level commitments/achievements

- **Over 40% non-fossil fuel capacity in electricity** mix by 2030
- **Renewables targets: 175 GW renewable energy by 2025** (100 GW of Solar, 60 GW of Wind, 10 GW of biomass and 5 GW of small hydel)
- Financing - grants, subsidies, tax incentives
- **Renewable Purchase Obligation (RPO) 2023** - 24.61% RPO by DISCOMS for FY 2023-24.
- All buildings required to install rooftop solar water heaters for water heating (Energy Conservation Act, 2001)
- Transition to cleaner cooking fuel via LPG connections and decentralized solutions.

RE PROGRESS REPORT (UPTO FEBRUARY - 2023)

Sl No	RE Sources	Allotted Capacity (MW)	Commissioned Capacity (MW)	Cancelled Capacity (MW)
1	Wind	26784.47	5231.29	10237.41
2	Solar	14545.82	8062.28	957.00
3	Hydro	3010.25	903.46	1873.17
4	Co-gen	2212.65	1731.16	0.00
5	Biomass	395.13	139.03	0.00
6	Muncipal Solid Waste	51.00	0.00	0.00
7	Hybrid (Wind & Solar)	463.30	0	0
	Total	47462.62	16067.22	13067.58

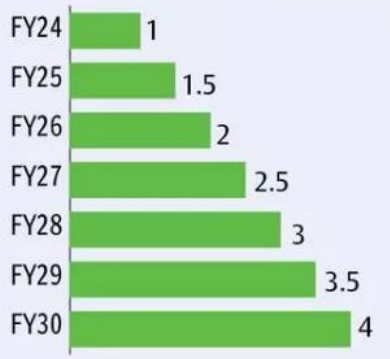
Renewable Purchase Obligation (RPO) *target (%)*

Fiscal year	Wind	Hydel	Others	Total
FY23	0.81	0.35	23.44	24.61
FY24	1.6	0.66	24.81	27.08
FY25	2.46	1.08	26.37	29.91
FY26	3.36	1.48	28.17	33.01
FY27	4.29	1.8	29.86	35.95
FY28	5.23	2.15	31.43	38.81
FY29	6.16	2.51	32.69	41.36
FY30	6.94	2.82	33.57	43.33

Energy Storage Obligation (ESO)

target (%)

Storage (on energy basis)



Source: Ministry of Power

Renewable energy

Current Status

Karnataka State level

- Karnataka has about **1,55,074 MW of estimated RE potential**,
- **Karnataka** and Gujarat **made the most progress towards clean electricity transition** *(Indian States'Electricity Transition 2023)*
- **50% of Karnataka's energy demand met via solar and wind.**
- Karnataka Renewable Energy Policy (2022-2027) - first southern State in India to notify
- Surya Raitha Scheme - Solar pump sets for farmers
- Pavagada Solar Park in Karnataka is the world's largest operational solar power park - generating 2050 MW of energy.

BESCOM level

- KERC has directed **BESCOM to purchase 26.75% of energy from renewal sources** during 2022-23 to 2024-25
- BESCOM Grid connected solar rooftop scheme - net metering and gross metering
- **1.2 GW Potential rooftop solar** areas in Bengaluru by CSTEP's Rooftop Evaluation for Solar Tool (CREST)

Renewable energy

Recommendations

Meet **100% of Bengaluru's energy demand** via renewable sources by 2030.

Grid electricity -

- On site (Rooftop PV, biogas/WTE, small hydro)
- Off site (RPOs and utility scale solar)

Off grid electricity -

- Decentralized renewables

Non-electric fuel sources

- Cleaner cooking fuel, lower diesel generator demand

RECs

- Institute property level RECs

Solar and battery recycling

- Develop policies and integrate with EPR and circular business model incentives

Carbon neutral economy

Current Status

- India's Intended Nationally Determined Contribution (INDC) - **45% reduction in GDP emissions intensity** (from 2005 levels) by 2030
- **Karnataka has the 4th highest** GDP emissions intensity in India compared to other states (BEE, 2019)
- **Bengaluru has the 2nd highest** GDP emissions intensity in India compared to other major cities (IISc, 2015)
- Increased funding in recent years in collaboration with Mission Innovation and Skill India to drive innovation in clean energy, clean tech, batteries, etc..
- Public banks now provide solar financing loans via home loans or home improvement loans.
- The policies that need legislative changes to boost agroforestry, and private forestry will be brought in

Recommendations

- Enable a comprehensive and sustainable transition to a carbon neutral economy via regulatory and market based tools, skill development, and creating an ecosystem for clean energy innovation.
- Track and monitor GDP emissions intensity - aiming to reduce by 40% by 2030
- Continue to create demand for energy efficiency services and renewables
- Cross sector enagements and partnership, strong governance, creating a collaborative environment, and fostering an innovation ecosystem for support beyond funding

Energy resilience Recommendations

- Develop a robust **energy resilience plan** will provide **reliable energy security in case of grid failure.**
- Adopt the **GBCI PEER rating system** to benchmark the **electrical grid system and drive progress**

6. Energy governance and performance management

Current Status

- Multiple agencies involved
- Data collection, transparency, and monitoring not yet robust
- National Smart Grid Mission, 2015 - BEE and CEA have published standards and specifications for smart infrastructure.

Recommendations

- Establish a strong governance structure to drive planning, implementation, and ongoing monitoring and improvements.
- Baseline current performance of Bengaluru across sectors (utility scale, building level, appliances, etc.) and
- chart a roadmap for continuously collating, verifying and publishing this data for use towards furthering net zero goals.

NAMMA BENGALURU NAMMA MANIFESTO

2023

What should we Demand from our leaders to improve the Energy sector in State and city?

Open for Expert Discussion

ELECTION HABBA 2023
Electoral Awareness Campaign by B.PAC

THANK YOU!

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Summary and way forward

- Place holder