

# \$350-m Solar Fund in Works, says Minister

Our Bureau

**Bengaluru:** India is setting up a \$350-million solar development fund to support financing of solar projects, minister of state for new and renewable energy Raj Kumar Singh said.

Delivering the keynote address at the International Solar Alliance (ISA) forum in Abu Dhabi on Thursday, the minister said the cost of renewable energy has fallen steeply over the years and it was set to replace conventional energy. "India will achieve its target of installing 175 GW of renewable energy capacity well before 2020," Singh said.



**So far, 19 countries have ratified and 48 signed the ISA Framework Agreement**

PM Narendra Modi had earlier set 2022 as the deadline for reaching this milestone. "India has one of the fastest growing renewable energy programmes in the world," Singh added.

ISA is an alliance of sunshine-rich countries set up jointly by India and France on the sidelines of the historic Paris meeting on climate change in November 2015. The forum was one of its first outreach programmes. So far, 19 countries have ratified and 48 signed the ISA Framework Agreement.

Upendra Tripathy, interim director general of ISA, said letters of intent and MoUs for 10 new solar-related projects have been signed with various companies and bankers during the two-day forum, which ended on Thursday.

## State Invites Maruti, Honda Cars to Set up EV Units Here

**BENGALURU** Industries minister RV Deshpande has invited Maruti Suzuki and Honda Cars India to set up their electric vehicle units in Karnataka, reports **Our Bureau**. The minister has written separate letters to Maruti chairman RC Bhargava and Honda Cars CEO Yoichiro Ueno. Karnataka, he said, already has an electric vehicle policy in place. He mentioned about the availability of land and facilities at industrial clusters in Hosakote, Bidadi, Hubballi-Dharwad, Shivamogga and Belagavi.

# KIA to set up facility to deal with solid waste

**| Bangalore Mirror Bureau  
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**T**he Kempegowda International Airport (KIA), which generates over 20 tonnes of waste each day, has initiated the process of setting up a state-of-the-art solid waste management facility on its premises to achieve its sustainability goals.

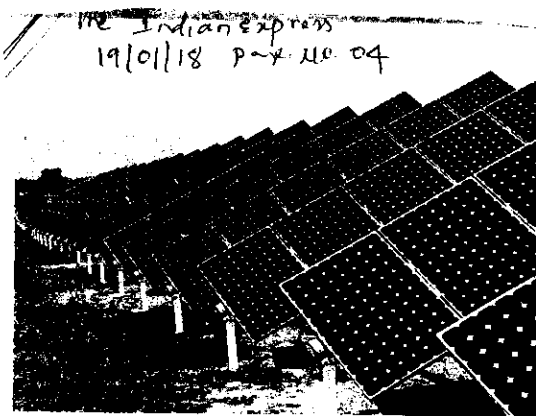
Ekolog Ltd, a Polish company with over 30 years of experience in the environmental technologies sector, has been selected as the implementation partner on this Design-Build-Own-Operate project.

Phase 1 of the facility will have the capability to process 20 TPD (tonnes/day) and will be scalable to 60 TPD.

This facility is scheduled to become operational from January 2019. Once commissioned, at 20 TPD, organic waste will be converted into sustainable bio-energy, through a process of biomethanation, generating enough electricity to power about 5,000 households each year. In addition, the facility will generate about 1.5 million kg of Class A organic compost per year. Recyclable waste will be segregated and sent to recyclers for useable product conversion.

"This is a big leap towards sustainability, leading to scientific and systematic waste management, including reduced landfill and increased resource recovery. BIAL's focus is to turn all the waste generated by KIA community into useable resources, thus ensuring that we minimise our carbon footprint," said Ratna Prabha, chief secretary, and chairperson, BIAL on the new initiative.

**Bescom:** Inauguration of 'Surya Raitha' electricity scheme, by state energy minister D K Shivakumar, Harobele village, Kanakapura, Ramanagara district, 10.30 am.



# Farmers will get power-generating solar water pumps

**EXPRESS NEWS SERVICE  
@Bengaluru**

**THE** much touted Surya Raitha scheme of the state government to replace irrigation pumpsets (IP sets) with metered solar water pumps that generate excess energy will be launched in Kanakapura on Friday as a pilot. Initially, 310 IP sets will be replaced by solar water pump sets which will have 1.5 times the capacity required to pump water to ensure that 1/3rd of the energy generated will be supplied to the electricity grid.

Announced in September 2014, the scheme will assure day time power supply to farmers which will help them irrigate their fields without having to turn on the IP sets in the night. This will ensure that wastage of power as well as water is checked. The pilot project has been financed by a combination of investment from farmers, subsidies from the Union and state governments as well as an interest-free soft loan provided by the Bangalore Electricity Supply Company (BESCOM). This loan will be recovered from the value of excess energy exported into the grid, BESCOM officials said. The surplus amount, once the loan is recovered, will be credited to the farmer's account.

"The net metering revenues will be deposited into an Escrow account as per tariff fixed by the Karnataka Electricity

Regulatory Commission (KERC). The tariff is used for loan repayment, generation-based incentives through farmers' co-operative societies and a sum paid to a society for its maintenance," a statement from BESCOM said. The payback period is expected to be between 12-14 years based on the amount of electricity generated and the utilisation of the pump set.

As part of the project, BESCOM will create a farmer's co-operative, channel subsidies, provide loans, sign power purchase agreements for 25 years and ensure daytime power supply to the pump sets. Farmers will provide shadow-free land for installing the systems and safeguard the solar photo-voltaic (pv) systems. A 'Harobele Surya Raitha Viduthchakthi Balakedarara Sangha Niyamtha' society has been formed for the pilot project in Kanakapura taluk. The society will receive quarterly payments from BESCOM and disburse the same among the farmers.

Benefits to farmers will include increased agricultural productivity, steady daytime power supply and a steady source of income even during drought years. The government will benefit from stoppage of subsidized energy to agricultural farmers and BESCOM will save on infrastructure costs and see a reduction in demand and technical losses.

### FEATURES OF THE SURYA RAITHA PILOT PROJECT (In Kanakapura taluk, Ramanagara district)

Dedicated high voltage distribution system (HVDS) feeder	All IP set consumers on feeder will be part of projects.	310 Number of pumpsets
	Assured day time power supply.	
IP sets will be metered for accounting purposes.	2.58 MWP Solar photo-voltaic capacity	11 Number of villages

The Hindu 19/1/18

# Towards solar-powered agriculture

India must exploit the potential of this technology to help farmers meet irrigation needs



ABHISHEK JAIN

In the past few years, solar pumps have consistently piqued the interest of various bureaucrats and politicians. The Prime Minister spoke about solar pumps from the ramparts of the Red Fort in 2016. There is no shortage of ideas which the Centre, States, civil society organisations, and enterprises are adopting to enhance penetration of solar for irrigation. But how should India proceed with this impactful technology?

## Case studies

Maharashtra is solarising its agricultural feeders by installing solar power plants at the substation level, through competitive bidding. Karnataka is promoting solar pumps for existing grid-connected farmers under a net-metering regime, allowing them to generate additional income by feeding back surplus energy into the grid. In eastern States, GIZ, a German de-

velopment agency, has piloted community ownership models providing water-as-a-service using solar pumps.

Despite the diversity of approaches and significant government subsidies, only about 1,42,000 pumps have been deployed till date against a target of one million pumps by 2021. Such limited demand, in a country with 132 million farmers and 28 million existing irrigation pumps, calls for a reflection on existing deployment approaches.

In India, 53% of the net-sown area is still rain-fed. Solar pumps hold potential to enhance irrigation access, advance low-carbon agriculture, reduce the burden of rising electricity subsidies, and improve the resilience of farmers against a changing climate. But farmers' perspectives have to be considered and the local context appreciated when deploying the technology to maximise economic returns.

## What can be done

At the Council on Energy, Environment and Water (CEEW), we have published three new research studies. I propose seven takeaways



M. SRINATH

for the government to consider while promoting solar for irrigation. First, target marginal farmers with smaller solar pumps, particularly in areas with good groundwater development potential. Our research, based on a recent primary survey of 1,600 farmers in Uttar Pradesh, revealed that close to 60% of marginal farmers relied on buying water, the costliest option for irrigation, or on renting pumps to meet their needs.

Second, couple solar pump deployment with micro-irrigation and water harvesting interventions at the farm and community levels. While lack of irrigation is a major bottleneck, 30% of farmers reported limited water availability for irrigation as a challenge.

Third, focus on technology demonstration and deploy at least five solar pumps in each block of the country. CEEW research suggests that such efforts could have a profound effect on farmers' willingness to adopt solar pumps and spur bottom-up demand.

Fourth, in regions with already good penetration of electric pumps, prefer feeder solarisation through competitive bidding over solarisation of individual pumps. A comparative economic analysis finds that solarising individual grid-connected pumps is the costliest approach for the government to expand irrigation cover, while not being the most attractive option for farmers.

Fifth, in regions with prevailing local water markets, promote community-owned solar pumps. CEEW research finds that while joint ownership drew interest from 20% of farmers, close to 80% of them were interested in buying water from a community-owned or enterprise-owned solar pump at competitive prices.

Sixth, encourage sharing of solar pumps among farmers through farmer extension programmes. Given zero marginal cost of pumping

with solar, water sharing, already a prevalent practice in many parts of the country, helps put a marginal price to the water.

Seventh, provide interest-subsidy to farmers combined with reduced capital subsidy to enable large-scale deployment of solar pumps in a shorter span of time. Such an approach would cover a greater number of farmers, helping them reap the benefits of solar pumps sooner, and increase overall returns to the economy.

Guided by on-ground experiences and an expanding body of research, the government should continuously improve and innovate its support mechanisms on solar for irrigation. India must exploit the potential of this decentralised technology to achieve the dual national targets of 100 GW of solar and doubling farmers income by 2022 – setting a world-class example of greening the economy and overcoming its developmental challenges, simultaneously.

*Abhishek Jain is a Senior Programme Lead at the CEEW, an independent not-for-profit policy research organisation. Email: abhishek.jain@ceew.in.*

# India to set up \$350 mn fund for solar projects to meet renewable energy target

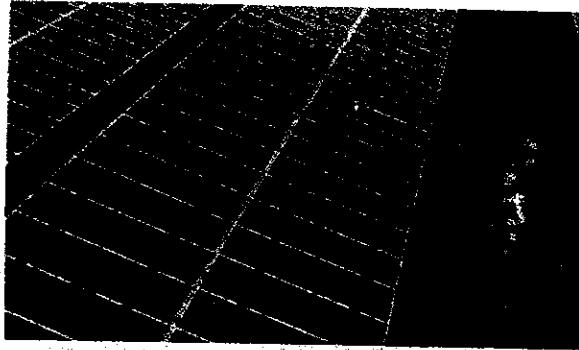
Minister confident of achieving 175 GW of installed capacity well before 2020

REUTERS  
NEW DELHI

India will set up a \$350 million fund to finance solar projects, Power Minister R.K. Singh said, as the country steps up efforts to achieve its ambitious target of adding 175 gigawatts (GW) in renewable energy by 2022.

India will need at least \$125 billion to fund a plan to increase the share of renewable power supply in the country's grid by 2022, underlining the immense financing challenge ahead.

The country, which receives twice as much sunshine as European nations, wants to make solar central to its renewable expansion. It expects renewable energy



Everything under the sun: India wants to make solar central to its renewable expansion strategy. -REUTERS

to make up 40% of installed power capacity by 2030, compared with 18.2% at the end of 2017. "The country would achieve its target of 175 GW of installed renewable energy capacity well before 2020," Singh said on

Wednesday at an event organised by the International Solar Alliance (ISA) in Abu Dhabi. Installed renewable power capacity is currently about 60 GW, and India plans to complete the bidding process by the end of

2019/20 to add a further 115 GW of installed renewable energy capacity by 2022.

India's Yes Bank Ltd. has committed to financing solar projects worth \$5 billion, while state-run NTPC Ltd. will contribute \$1 billion to an ISA fund, the power ministry said in a statement.

### Foreign capital

India wants foreign capital to account for a bulk of its investments to meet its renewable energy target.

But industry experts said most of the financing for the country's renewables drive so far has come from domestic banks and such banks have to account for the lion's share of new renewable investments in the future.

# BIAL to Set Up In-house Solid Waste Management Facility

Facility to generate about 1.5 million kilos of Class A organic compost every year

Our Bureau

**Bengaluru:** The Kempegowda International Airport (KIA), which generates over 20 tonnes of waste each day, will set up its own solid waste management facility. The facility will be operational in January 2019. Ekolog Ltd, a Polish company,

has been roped into to implement the project under Design-Build-Own-Operate (DBOO) basis. "The Phase 1 will have the capability to process 20 TPD (tonnes/day) and will be scalable to 60 TPD," an official release said.

Once commissioned, the organic waste will be converted into sustainable bio-energy through a process of biomethanation. In the process, it will generate enough electricity to power about 5,000 households each year. The facility will also generate about 1.5 million kilos of Class A organic compost every year.

Ratna Prabha, chief secretary and chairperson, BIAL, said,

"This is a big leap towards sustainability leading to scientific and systematic waste management including reduced landfill and increased resource recovery. BIAL's focus is to turn all the waste generated by KIA community into useable resources, thus ensuring that we minimise our carbon footprint."

Hari Marar, managing director and CEO at BIAL, said, "The Kempegowda International Airport will be the first in Asia to adopt an in-house, sustainable and integrated waste management facility. Our aim is to ensure that our airport environment works towards the highest adherence of sustainability."



A whiff of fresh air

The Hindu 19/1/19 pg. 02

# Work on waste management facility at airport begins

Initiative is being touted as the first of its kind in Asia

SPECIAL CORRESPONDENT  
BENGALURU

Authorities at the Kempegowda International Airport on Thursday started work on an integrated solid waste management facility, which is being claimed as the first of its kind in Asia. The facility will be commissioned in January 2019.

According to a release, the facility will handle the 20 tonnes of waste generated daily at the airport. This will be scalable to 60 tonnes per day.

Organic waste will be con-

verted into sustainable bio-energy through biomethanation. The energy will be enough to power about 5,000 households each year.

The facility will generate about 1.5 million kg of Class A organic compost per year while recyclable waste will be segregated and sent to recyclers, the release said.

The facility is being built by Ekolog Ltd., a Polish company, which has over 30 years of experience in environmental technologies, on a design-build-own-operate basis.

Chief Secretary Ratna Prabha, who is the chairperson of Bangalore International Airport Ltd, which operates KIA, said the facility is a big leap towards sustainability, leading to scientific and systematic waste management, including reduced landfill and increased resource recovery.

BIAL Managing Director and CEO Hari Marar said Kempegowda International Airport will be the first in Asia to adopt in-house sustainable and integrated waste management facility.

Delhi News 19/1/19

## No power supply tomorrow

There will be no power supply between 11 am and 4 pm on January 20 due to maintenance work. The areas that will be affected are Madeena Nagar, HSR Layout, Neelakanteshwara Badavane, Rajeev Gandhi Nagar, Bommanahalli, Roopena Agrahara, ITI Layout, Manjunatha Layout, Popular Colony and surrounding areas.

Page 10 19/1/19 stood at ₹7,536.5. the cost of the project is ₹7,536.5.

## \$350mn solar fund to be set up: Min

New Delhi: Centre will set up a \$350 million solar development fund for financing solar projects, new and renewable energy and power minister Raj Kumar Singh said on Thursday. Over the years, he said, renewable energy has become cheaper and is set to replace conventional energy, which is a healthy development. India has one of the fastest growing renewable energy programmes in the world and the country would achieve its target of 175 GW of installed renewable energy capacity well before 2020, he said. — PTI

D.H 19/1/19 30

## KIA to begin work on own waste unit

BENGALURU, DHNS: The Kempegowda International Airport (KIA), which generates over 20 tonnes of waste daily, will set up a solid waste management facility on its premises. Arguably the first Asian airport to do so, the first phase of the project is scheduled to be commissioned in 2019.

Polish firm Ekolog Ltd is the implementation partner for the project. Phase 1 of the facility will have the capability to process 20 TPD (tons/day) and will be scalable to 60 TPD.

Once commissioned, 25 TPD, organic waste will be converted into bio-energy. This, according to a BIAL release, will generate enough electricity to power about 5,000 households each year. In addition, the facility will generate about 1.5 million kg of Class A organic compost a year.

//INDIAN EXPRESS 19/01/18 Page No: 04

**ಬೆಂಗಳೂರು ವಿದ್ಯುತ್ ಸರಬರಾಜು ಕಂಪನಿ ನಿಯಮಿತ**  
 (ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಸಂಪೂರ್ಣ ಸ್ವಾಮ್ಯಕ್ಕೆ ಸೇರಿದುದು)  
 (CIN - UO4010KA2002SGC030438)

**ಅಲ್ಪಾವಧಿ ಟೆಂಡರ್ ಪ್ರಕಟಣೆ (ಇ-ಪ್ರೊಕ್ಯೂರ್‌ಮೆಂಟ್ ಮೂಲಕ)**

ಬೆಂಗಳೂರು, ವಿಜಯಪುರ, ಸರಸ್ವತಿ ಅಭಿವೃದ್ಧಿ/ಶಾಂತಿನಿಗಂ/ಎಂಎ-ಟಿಕೆಆರ್/ಟಿಟಿಕೆ/17-18/ಎ-038, 039 & 040 ದಿನಾಂಕ : 17.01.2018 ರ ಅನಂತರ 1) ಶುಮಕೂರು ವಿಭಾಗ, ಶುಮಕೂರು ಗ್ರಾಮೀಣ, ಗುಬ್ಬಿ-ಹಾಗೂ ಕುಣಿಗಲ್ ಶಾಸಕರ ಕ್ಷೇತ್ರ (ಎ-038) 2) ತಿಪಟೂರು ವಿಭಾಗ, ತಿಪಟೂರು, ಶುರುವೇಕೆರೆ & ಸಿ.ಎನ್.ಹಳ್ಳಿ ಶಾಸಕರ ಕ್ಷೇತ್ರ (ಎ-039) 3) ಮಧುಗಿರಿ ವಿಭಾಗ, ಮಧುಗಿರಿ, ಸಿರಾ, ಕೊರಟಗೆರೆ ಮತ್ತು ಪಾವಗಡ ಶಾಸಕರ ಕ್ಷೇತ್ರ (ಎ-040) ಗಳಲ್ಲಿ ಗುರುತಿಸಲಾದ ಮಾದರಿ ಗ್ರಾಮಗಳಲ್ಲಿರುವ ಹೊಸ 11ಕೆವಿ ಮಾರ್ಗಗಳ ವಿಸ್ತರಣೆ, ಹೆಚ್ಚಳ & ಎಲೆಟ್ರಿಕ್ ಮಾರ್ಗಗಳ ರೀಕಂಡಕ್ಟರಿಂಗ್, ಹೆಚ್ಚುವರಿ ಡಿಟಿಗಳನ್ನು ಒದಗಿಸುವುದು, ಮಧ್ಯಂತರ ಕಂಬಗಳನ್ನು ಒದಗಿಸುವುದು, ಎಲೆಟ್ರಿಕ್ ಸಿಂಗಲ್ ಫೇಸ್‌ನ್ನು ಮೂರನೇ ಫೇಸ್ ಆಗಿ ಪರಿವರ್ತಿಸುವುದು, ಹಾಲಿ ಇರುವ ದೀಡಿ ದೀಪಗಳಿಗೆ ಎಲ್‌ಇಡಿ/ಸೋಲಾರ್ ಬಲ್ಬುಗಳ ಹಾಗೂ ಟೈಮರ್ ಸ್ವಿಚ್‌ಗಳನ್ನು ಅಳವಡಿಸುವುದು, ಡಿಟಿಗಳಿಗೆ ಸಂಬಂಧಿತ ಸಕಲ ರೀತಿಯ ಹಾಗೂ ಇತರ ಆರ್‌&ಎಂ ಕಾಮಗಾರಿಗಳಿಗೆ ಅನುಮಾನವಾಗಿ ಗುರುತಿಸಲ್ಪಟ್ಟ ಕಂಬಗಳನ್ನು / ಮಾರ್ಗಗಳನ್ನು ಬದಲಾಯಿಸುವಂತಹ ವ್ಯವಸ್ಥೆ ಬಲಗೊಳಿಸುವ ಕೆಲಸಗಳ ನಿರ್ವಹಣೆಗಾಗಿ ಸಂಪೂರ್ಣ ಟೆಂಡರ್ ಆಧಾರದ ಮೇಲೆ ತೇಕಡವಾರು ಪೂರೈಕೆಗಾಗಿ ದರ ಗುತ್ತಿಗೆ ಪ್ರಕಾರ ಮಾದರಿ ಗ್ರಾಮ ಯೋಜನೆ ಅಡಿಯಲ್ಲಿ ಟೆಂಡರ್ ಆಹ್ವಾನಿಸಿದೆ. ಬಿಡ್ ಡಾಕ್ಯೂಮೆಂಟ್ ಲಭ್ಯತೆ: ದಿನಾಂಕ 19.01.2018, 16.00 ಗಂಟೆಯಿಂದ 03.02.2018 ರ 16.00 ಗಂಟೆಯವರೆಗೆ. ಬಿಡ್ ಡಾಕ್ಯೂಮೆಂಟ್ ಸ್ವೀಕರಿಸಲು ಕೊನೆಯ ದಿನಾಂಕ : 03.02.2018 ರ 16.00 ಗಂಟೆಯವರೆಗೆ. ಬಿಡ್ ಡಾಕ್ಯೂಮೆಂಟ್ ತೆರೆಯುವುದು : 07.02.2018 ರ 11.00 ಗಂಟೆಯವರೆಗೆ. ವಿವರಗಳಿಗೆ ವೆಬ್‌ಸೈಟ್: <http://eproc.karnataka.gov.in> ಗೆ ಭೇಟಿ ನೀಡಿ. ಇ-ಪ್ರೊಕ್ಯೂರ್‌ಮೆಂಟ್ ಸಹಾಯವಾಣಿ 080-25501216 / 25501227 ಇಂದ ಸಹಾಯ ಪಡೆಯಬಹುದು.

ವಿದ್ಯುತ್ ಸಂಬಂಧಿತ ದೂರುಗಳಿಗೆ ಕರೆಮಾಡು : 1912

ಸಹ-ಅಧೀಕ್ಷಕ ಇಂಜಿನಿಯರ್ (ಎ),  
 ನಾ.ಶಾ ಮತ್ತು ನಾ ವ್ಯಕ್ತೆ, ಬೆಂಗಳೂರು, ಶುಮಕೂರು

**Bangalore Electricity Supply Company Limited**  
 (Wholly owned Government of Karnataka Undertaking)  
 (CIN - UO4010KA2002SGC030438)

**Short Term Tender Notification (Through E-procurement portal)**

BESCOM invites tenders against Enquiry No. SEE/EEO/AEEO/MV-TKR/TTK/17-18/Enq-038, 039 & 040 dated 17.01.2018 for the work of Execution of System Strengthening works like Extension of New 11KV Lines, Reconductoring of HT & LT Lines, Providing Add DTC's, Providing IM Poles, Conversion of LT Single phase to three Phase, Fixing of LED/Solar Bulbs & Timer Switches to existing Street Lights, Metering of Un metered installations, replacement of poles / Lines identified under Hazardous & Other R&M works related to DTC's in identified Model Villages of 1) Tumkur Rural, Gubbi and Kunigal MLA Constituencies in Tumkur Division (Enq-038), 2) Tiptur, Turuvekere & C.N.Halli MLA Constituencies in Tiputur Division (Enq-039), 3) Madhugiri, Sira, Koratagere & Pavagada MLA Constituencies in Madhugiri Division (Enq-040) under Model Village Scheme on Total Turn Key under percentage Rate Contract Basis. Bid document available from: 19.01.2018, 16.00 Hrs to 03.02.2018 up to 16.00 Hrs. Last date for Receipt of Bid document: Up to 03.02.2018, 16.00 Hrs. Opening of Technical Bid: 07.02.2018, 11.00 Hrs. The bidding documents can be downloaded through e-procurement portal from the website: <http://www.eproc.karnataka.gov.in>. Further bidders can take the assistance with e-procurement help desk at 080-25501216 and 080-25501227.

For electricity related complaints call 1912

Sd/- Superintending Engineer (Ele.),  
 C,O&M Circle, BESCOM, Tumakuru

The Hindu 19/1/18

**BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED**  
 (Wholly owned by Government of Karnataka Undertaking)  
 (CIN - UO4010KA2002SGC030438)

**SHORT TERM TENDER NOTIFICATION (Through e-Procurement Platform)**

Bangalore Electricity Supply Company Limited invites Tender vide Enquiry No: BCP- 1074/2017-18 on 19.01.2018 for Procurement of 220 KV Class 6 Nos of Potential & 3 Nos of Current Transformers. Bid Documents available From: 19.01.2018 to 27.01.2018 @ 10.00 Hrs. Last date for submission of Bids: 27.01.2018 15.00 Hrs. Opening of Bid Document: 29.01.2018 15.15 Hrs. The Bidding Documents can be downloaded through the e-procurement portal from the website <https://www.eproc.karnataka.gov.in>. Aspiring bidders need to register in the e-procurement portal. Further bidders can take the a assistance of the e-procurement help desk at 080-25501216 / 080-25501227.

For electricity related complaints call: 1912

Sd/- General Manager (Elec.),  
 Procurement, BESCOM