



Public procurement of energy efficient appliances can be improved

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Public procurement involves purchasing of goods, services and works by the government and associated organizations for public service delivery. It accounts to about 20-30% of India's GDP as per various estimates. Given its large size, public procurement can be an effective policy instrument to achieve multiple social, economic, and environmental objectives. In 2013, the Ministry of Finance (MoF) in consultation with the Bureau of Energy Efficiency (BEE) issued a memorandum that prescribed minimum energy efficiency thresholds for public procurement of four commonly procured appliances with an aim *'to effect energy savings in long term by promoting procurement of energy efficient equipment'*. Public institutions procuring energy efficient appliances on large scale can not only save their electricity bills but can also create a market demand which can facilitate a larger market transformation. In this article, we discuss compliance with the MoF memorandum using data from the Government e-Marketplace (GeM) and make some recommendations to improve the public procurement of energy efficient appliances.

1. Introduction

Public procurement involves purchasing of goods, services and works by the government for public service delivery. It **encompasses activities** ranging from assessment of needs to awards of contract and payment. Public procurement in India constitutes around **20% of the GDP** according to World Bank. Few other estimates place it around **25% to 30%** of the GDP. It is a sizable part of the country's economic activity. Large scale demand from government entities can have a significant influence over sellers and manufacturers.

Considering the size of public procurement in country budgets, **target 12.7** under Sustainable Development Goals calls to *'promote public procurement practices that are sustainable, in accordance with national policies and priorities'*. Herein, energy efficient public procurement i.e. policies pushing for procurement of most efficient models of appliances become an important instrument within the broader sustainable procurement policy. In March 2018, a **Sustainable Procurement Task Force** was constituted by the Ministry of Finance, to draft a Sustainable Procurement Policy. According to the office memorandum, the task force would review the international best practices in sustainable procurement, stock taking of status of sustainable procurement across government organizations, preparing a draft Sustainable Procurement Action Plan along with recommending a set of products and services where the prepared plan of sustainable procurement would be implemented. The draft Sustainable Procurement Action Plan is still awaited.

2. Public procurement policy in India

Public procurement in India has a vast and complex policy landscape. There is no existing legislation that uniformly applies to the Centre and States. Instead, **General Financial Rules (GFR)**, a compilation of rules and orders from the Government of India, deal with the subject of public finance including public procurement. These rules are followed by all ministries and departments of the Central Government. GFR,

reissued in 2017, cover the subject of public procurement of goods from Rule 142 to Rule 176. The GFR are also supplemented by a procedural guide for procurement called [Manual for Procurement of Goods](#). The policy framework of public procurement is steered by the Procurement Policy Division under the Department of Expenditure, Ministry of Finance. It notifies amendments to GFR and issues additional procurement policies via office memorandums.

Few states like Andhra Pradesh, Assam, Karnataka, Punjab, Rajasthan and Tamil Nadu have promulgated state-specific statutes like the Rajasthan Transparency in Public Procurement Act, 2012, the Tamil Nadu Transparency in Tenders Act, 1998, etc. Few others like Uttar Pradesh and Madhya Pradesh have put in place manuals and rules like the Uttar Pradesh Procurement Manual (Procurement of Goods), 2016, the Madhya Pradesh Store Purchase Rules and Services Procurement Rules, 2015, etc.

In 2016, Government of India launched the [Government e-Marketplace \(GeM\)](#) portal as the national portal for public procurement for more commonly used products. For all goods and services available on the portal, the purchases through the GeM portal are mandatory under Rule 149 in GFR for central government bodies. States can procure after signing a memorandum of understanding with GeM. The portal attempts to provide sellers a common platform with easier access to government buyers. Procurement via GeM can be done as a direct purchase. However, online bidding or reverse auctions are mandatory for order above the value of 30 lakhs. As on 30th December, 2020, the transaction value on the GeM portal [crossed ₹74,552 crores since inception](#), with 11,543 product categories and 9 lakh sellers and service providers. This figure stood at [₹35,486 crores](#) by the end of 2019.

Aside from the GeM portal, procurement is also done on an offline mode or via publishing tenders on Central Public Procurement Portal (CPPP) or state specific portals. Methods specifically used for procurement of appliances are that of direct procurement or inviting bids over tenders and reverse auction.

3. Policy for procurement of appliances

In 2013, the Procurement Policy Division, Ministry of Finance, mandated the public procurement of energy efficient air conditioners, electric water heaters, ceiling fans and frost-free refrigerators via an [office memorandum](#). Procuring entities would have to purchase these appliances at or above the indicated BEE star rating.

Table 1: BEE star procurement thresholds for appliances by Procurement Policy Division, Ministry of Finance

Appliance	Threshold BEE star rating
Split air conditioner	5 star (under normal conditions where annual usages are expected to be more than 1000 hrs.) 3 star (where usage of AC is limited, eg. in conference rooms)
Frost free refrigerator	4 star
Ceiling fans	5 star
Electric water heaters	5 star

Source: Office Memorandum (No. 26/6/12-PPD) by Procurement Policy Division, Ministry of Finance

Aside from this mandate, Rule 173 from GFR, 2017, directs procuring entities towards purchase of efficient appliances over inefficient ones. It states that '*Procurement of Energy Efficient Electrical Appliances:*

Ministries/ Departments while procuring electrical appliances notified by Department of Expenditure shall ensure that they carry the notified threshold or higher Star Rating of Bureau of Energy Efficiency (BEE).'

4. Compliance to the energy efficient procurement policy on GeM portal

The GeM portal makes available appliances that have BEE Star ratings lower than the threshold established by the Procurement Policy Division’s memorandum. Lower efficiency appliances end up being procured by the government organizations. Data on procurement of appliances from GeM was collected via an RTI application as well as retrieving information from the publicly available contracts of the four appliances on the [GeM portal](#) for the period of 9th September, 2020 to 8th December, 2020. Contracts for a period of 3 months are available on the portal with no publicly accessible archive of older contracts. Appliances available for purchase on GeM were also assessed in a sample of 21 pages out of 104 pages for ceiling fans, 20 pages out of 80 for water heaters, 20 pages out of 101 for refrigerators and 25 out of 228 for air conditioners. Each webpage for products available for purchase displays 12 models of an appliance at once.

Data on direct and offline procurement i.e. purchase aside from GeM or standard bid inviting process was not available in the public domain. The table below presents the quantity and value of 4 appliances procured from GeM portal from 2018 to November, 2020.

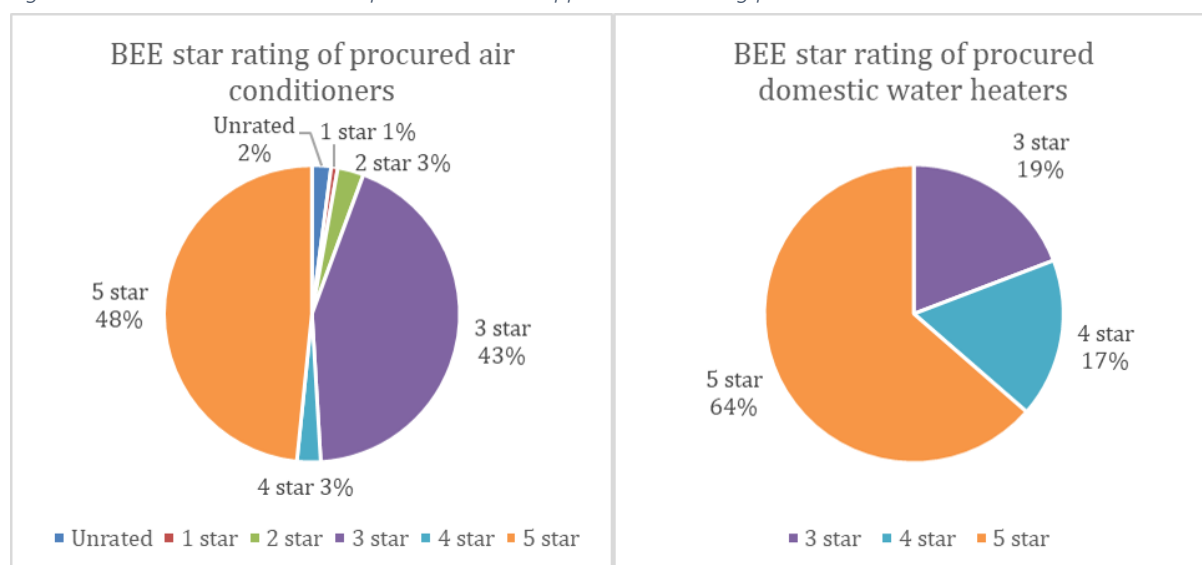
Table 2: Procurement quantity and value of 4 appliances from RTI response by GeM portal

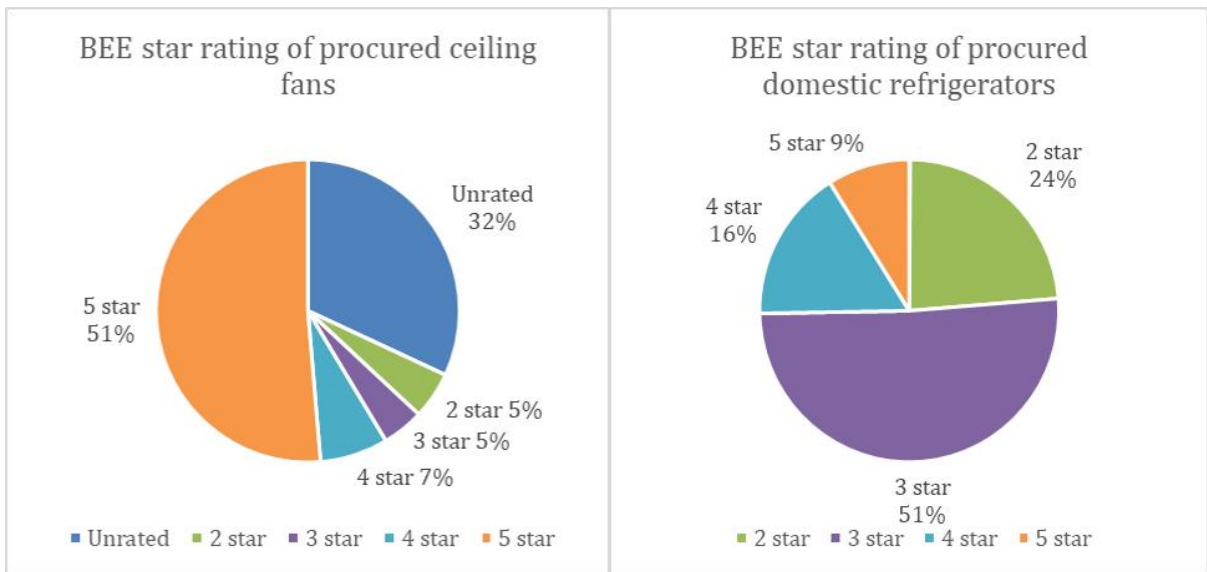
Appliance procured from GeM January 1, 2018 - November 30, 2020	Total quantity	Total value (crores rupees)
Air conditioners	1,18,278	476.24
Domestic water heaters	41,445	75.97
Ceiling fans	6,03,200	62.42
Domestic refrigerator	29,631	29.7
Total:	7,92,554	644.34

Source: Compiled by Prayas (Energy Group) from the RTI response

The following figures highlight the procurement quantity of appliances based on the BEE star rating:

Figure 1: Pie charts based on RTI response show that appliances are being procured below the established threshold

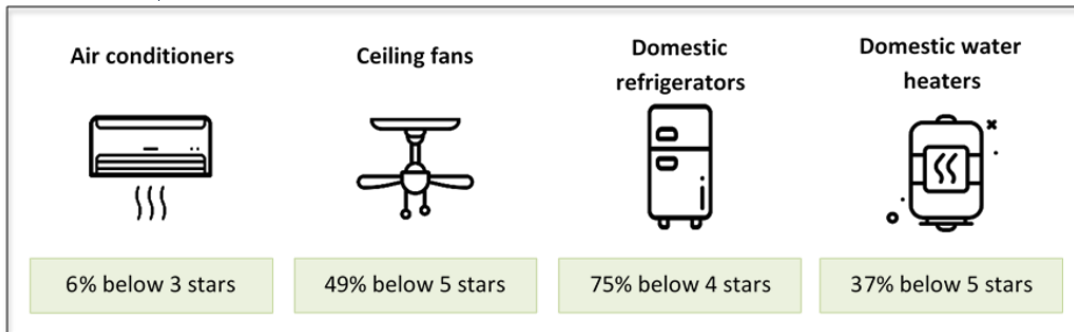




Source: Compiled by Prayas (Energy Group) from the RTI response

According to the GeM data, about 49% ceiling fans, 75% refrigerators, and 36% of water heaters purchased from the portal were below the prescribed thresholds. In case of air-conditioners, there are two thresholds: a 3-star rating for limited use such as conference rooms and a 5-star rating for regular use. Only about 48% are 5 star rated while about 43% have 3 star rating while the rest are below the threshold. It is not clear whether the justification for the 3-star rated air-conditioners as prescribed in the memorandum was followed.

Figure 2: Percentages of appliances procured from GeM below the established BEE star threshold from January 1, 2018 to 30 November, 2020



Source: Compiled by Prayas (Energy Group) from the RTI response

Data retrieved from the contracts available on the GeM portal provides more nuance for refrigerators. In the 3 month period, 835 refrigerators out of the 2215 procured used direct cool technology. It is possible that a substantial portion of refrigerators procured use the direct cool technology. The policy memorandum, however, establishes BEE star rating threshold only for frost free refrigerators. Direct cool refrigerators were incorporated under the mandatory standards and labelling scheme in 2016. These refrigerators are left out of the procurement policy with no mandate on purchase of their energy efficient variants. As the data from GeM contracts show, 82% of these direct cool refrigerators procured were the below the 4 star rating threshold.

Purchase of lower efficiency appliances indicates availability of such models on the portal. Information gathered from the product display section found that 51% ceiling fans did not have a BEE star rating mentioned. Labelled as "NA", it remains unclear whether they are unrated or if the star rating is merely a missing value. Similarly, 82% refrigerators were below 4 stars and 33% water heaters were below 5 stars. 4% ACs were below 3 stars though 3 star ACs alone constitute 55%. Domestic refrigerators below the established threshold were also available for purchase.

BEE publishes a list of all the approved brands and models on its website as per their star rating. It was found that a few models on the GeM website were not listed on BEE's website. This raises questions on the veracity of the claimed star-ratings of some of the models available on the GeM website. Availability of lower efficiency appliances on the portal leaves them susceptible to purchase in contrast to what the memorandum mandates.

GeM portal, according to the [GeM handbook](#), must provide mechanisms needed to ensure compliance with various procurement policies and orders released by different ministries. However, GeM portal's interface does not allow sorting of appliances based on product specifications. Price is the only condition against which an appliance can be sorted. For example, specifications of air conditioners like BEE star rating, type of AC, coil material, etc., cannot be used as filters to view desired variants of ACs. This directly impacts buyer-friendliness and ease of searching for appropriate and efficient appliances that comply with procurement policy.

5. Suggestions

Energy efficient public procurement policy of India has been in place since 2013. However, with the changing procurement landscape and increased commitment towards energy efficiency, there is considerable scope for improvement. Alongside strengthening the Procurement Policy Division's 2013 memorandum, suggestions also include supplementary measures to be taken for improving procurement policies and ushering in a sustainable public procurement regime.

a. *Revision of energy efficient procurement policy:*

- The Procurement Policy Division, Ministry of Finance, in consultation with the BEE should update the 2013 memorandum to expand the number of appliances to be procured above a BEE star rating threshold. Taking note that direct cool refrigerators as well as cassette and window air conditioners are procured via GeM portal, the memorandum could be expanded to include purchase of efficient models of more appliances like color TV and tubular fluorescent lamps under the [BEE's Standards & Labelling program](#). The program has 10 mandatory and 16 voluntary appliances. Eventually, the policy could be expanded to include appliances from voluntary ones like office equipment, washing machines, computers, etc. The policy, when updated, should also be open for comments and suggestions from the public.

b. *Improving compliance:*

- Products below the prescribed threshold level should not be available on the GeM portal, and it should have mechanisms to regularly weed out such products. Moreover, GeM portal should add mechanisms on the site to sort products on parameters other than their price. Currently, the specifications of a product on the portal do not act as filters. Filters such as BEE star rating, availability of test reports could be useful for government buyers to search for appropriate and efficient appliances. Additionally, new and existing buyers and sellers should be provided with the 2013 memorandum in addition to GeM terms and GFR.

- Energy efficiency as a criterion could be considered for monitoring of tenders and direct purchases from the GeM portal. The Department of Industrial Policy and Promotion (DIPP) floated a [Request for Proposal](#) in August, 2020, to hire a consulting agency that monitors tenders and their compliance with [Public Procurement \(Preference to Make in India\) Order, 2017](#). Such efforts can also include the criterion of energy efficiency. Comptroller and Auditor General (CAG) and Central Vigilance Commission (CVC) should take cognizance of public procurement activities and conduct timely audits to see compliance with procurement policies such as the 2013 memorandum.
- National Institute for Financial Management is the nodal agency for capacity building of procurement officers largely at the level of the central government. It should expand its training to reach out to more procurement officials. Aside its residential capacity building program, it should also consider digital sessions on the 2013 memorandum and concepts of energy efficiency with BEE's support. It is vital to expand these trainings to procurement officials in the states and local governing bodies.

c. *Transparency measures and tracking benefits:*

- The Procurement Policy Division should streamline direct and offline procurement. This should not be excluded from e-publishing. A dedicated portal should be created to bring this largely opaque area of procurement into the public domain. This would support the auditing process of CAG and CVC for public procurement.
- Countries such as [South Korea and Japan have installed strong reporting mechanisms to track impact of such policy](#) not just with regards to uptake but also cost savings, energy savings, emissions avoided, etc. using various methodologies based on the product. They track the impact of these policies using data collected on actual purchases. The same report states that, in the Republic of Korea, more than 30,000 public organizations submitted their Green Public Procurement plans and procurement records in 2017. Having a strong reporting mechanism could also prove fruitful in measuring the impact of this policy. Additionally, ministries and departments must also be directed to adhere to Rule 144 of GFR and make available their Annual Procurement Plan in the public domain.
- Taking cognizance of the wide variations in availability of information and transparency at various levels of government, state level departments and local governments must be reached out to. State governments should also investigate ways of disseminating the concept of energy efficiency to smaller departments and local bodies and bringing it into the domain of public procurement.

Table 3: Summary of suggestions

Recommendation	Actionable measure	Stakeholder
Updating the 2013 memorandum	<ul style="list-style-type: none"> • Memorandum should be periodically updated to cover appliances under BEE's Standards & Labelling programme. 	Procurement Policy Division, Ministry of Finance
Changes in GeM portal	<ul style="list-style-type: none"> • Delist products below the established BEE star rating threshold. • Activate filters other than price so buyers can search for efficient models. • Provide new and existing buyers and sellers with the memorandum aside the GeM policies and GFR, 2017. 	GeM portal
Monitoring and compliance with the memorandum	<ul style="list-style-type: none"> • Energy efficiency could be considered as a criterion for monitoring of tenders and direct purchases from the GeM portal. • CAG and CVC should conduct timely audits on compliance with procurement policies and of GeM portal. 	GeM portal, CAG and CVC

Transparency in other methods of procurement	<ul style="list-style-type: none"> • Create a publicly available reporting mechanism for offline and direct procurements. A strong reporting mechanism would prove fruitful in measuring the impact of energy efficient public procurement. • Improve compliance to GFR Rule 144 and direct ministries to make their Annual Procurement Plans available in public domain. 	Department of Expenditure in Ministry of Finance, BEE
Training of procurement officials	<ul style="list-style-type: none"> • Aside residential capacity building programs, training could also be done over distance. BEE can lend support for training with energy efficient public procurement. 	National Institute of Financial Management, BEE

Source: Prayas (Energy Group) analysis

6. Conclusion

Spending public money only on energy efficient appliances and sustainable procurement should be prioritized. Energy efficient procurement policy has been around since 2013. However, there is non-compliance to this policy as lower efficiency appliances are available for purchase and procured by the government. The policy needs to be strengthened and enforced. It should be made available in public domain for comments and suggestions.

Energy efficient public procurement would be an essential part of the sustainable procurement policy. The Sustainable procurement task force constituted in 2018 should consider the suggestions for the draft Sustainable Procurement Action Plan. A stronger reporting mechanism and monitoring is required to check for compliance. India hasn't yet come up with a framework for evaluating the benefits of such policies.

Going forward, strengthening the transparency measures and tracking benefits from energy efficient public procurement could set good precedent to bring about sustainable procurement regime at various levels of the government. Public procurement should be effectively leveraged to usher in sustainability in its practice.

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² This article is part of an ongoing series called Power Perspectives which provides brief commentaries and analyses of important developments in the Indian power sector, in various states and at the national level. The portal with all the articles can be accessed here: <https://prayaspune.org/peg/resources/power-perspective-portal.html>. Comments and suggestions on the series are welcome and can be addressed to powerperspectives@prayaspune.org.

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