Implications of GST on delivered cost of renewable energy

Ministry of New and Renewable Energy

Glossary

S.No.	Abbreviation	Meaning
1	ACD	Additional Duty of Customs (levied in lieu of excise duty)
2	BCD	Basic Customs Duty
3	CERC	Central Electricity Regulatory Commission
4	CGST	Central Goods and Services Tax
5	COG	Cost of goods
6	CST	Central Sales Tax
7	GST	Goods and Services Tax
8	GTA	Goods Transport Agencies
9	GST Bill	Constitutional (One Hundred and Twenty Second Amendment Bill) 2014
10	IGST	Integrated Goods and Services Tax
11	MNRE	Ministry of New and Renewable Energy
12	O&M	Operation and maintenance
13	OMC	Oil Marketing Company
14	SAD	Special Additional Duty of Customs
15	SGST	State Goods and Services Tax
16	VAT	Value Added Tax

Rating criteria

Impact		Meaning
	Positive Impact	Signifies positive impact under GST as compared to current tax regime
	Negative Impact	Signifies negative impact under GST as compared to current tax regime
	Neutral	Signifies no substantial change in GST as compared to current tax regime

Table of contents

Executive summary

Multiple Indirect taxes are currently levied on transactions in India. Some of the taxes are levied and collected by the Central Government, while other taxes are collected by the State Governments. Accordingly, the current Indirect tax regime is beset by myriad problems such as complexity, tax on tax and lack of credit fungibility.

Considering the issues plaguing the current Indirect tax regime, India is gearing up to introduce a comprehensive Indirect tax regime under GST. All existing Indirect taxes, barring a select few, would be subsumed into the new GST.

Taxes on consumption or sale of electricity have been proposed to be kept outside GST. In such case, the electricity generated by renewable sources would continue to be outside the GST regime.

However, taxes on various capital goods, inputs and input services (both forming part of capital cost as well as operation & maintenance costs) used for generation of renewable energy should be subsumed in the GST regime. Taxes paid on procurements would continue to be non-creditable for the energy sector and hence, forming part of costs. Accordingly, any impact of taxes paid on procurements used in renewable energy sector would have a direct impact on cost of renewable energy Basis information available in the public domain on levy of GST, it appears that taxes on procurements for renewable energy sector would go up, which would lead to increase in cost of renewable energy (resulting in negative impact for the sector).

Further, it is imperative to note that the adverse impact of tax cost would vary from project to project (as well as from one source of renewable energy to another) based on the procurement pattern (import vs. domestic purchase) as well as extent of exemptions available currently.

Based on the exercise undertaken, the summary of impact on various types of renewable energy projects is provided below

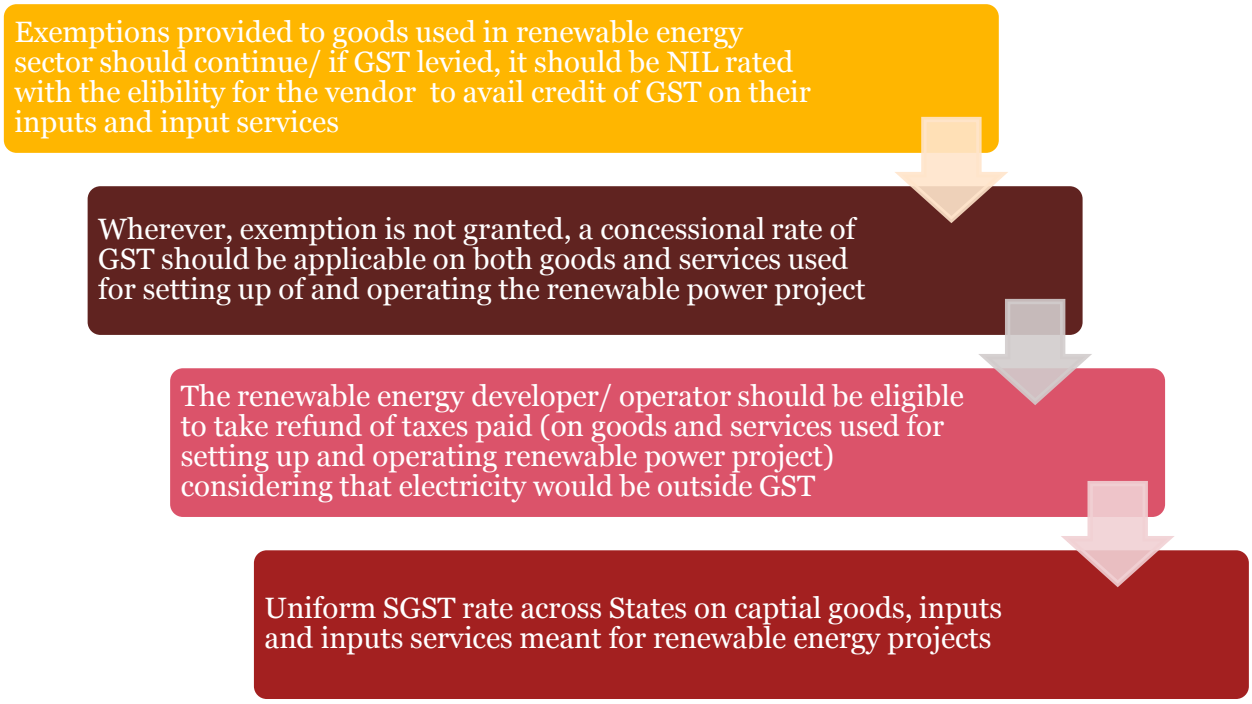
Source of renewable energy	**% range of increase in Levelised Tariff/ cost of setting up and operations (as applicable)**	**Impact**
Solar PV – GRID	12% - 16%	
Solar – off GRID	16%-20%	
Wind energy projects	11% - 15%	
Wind solar hybrid projects	11%-17%	
Bio Mass projects	11% - 14%	
Bio Mass gasifier projects	11%-14%	
Small Hydro projects	1% - 11%	

For the bio-fuel sector also, there would be a substantial increase in prices of inputs as well as bio-fuels itself due to pruning of exemptions, removal of statutory forms and increase in rate. Further, any GST charged on bio-fuels would become a cost to the OMCs (as petrol and diesel would be outside GST unless otherwise notified).

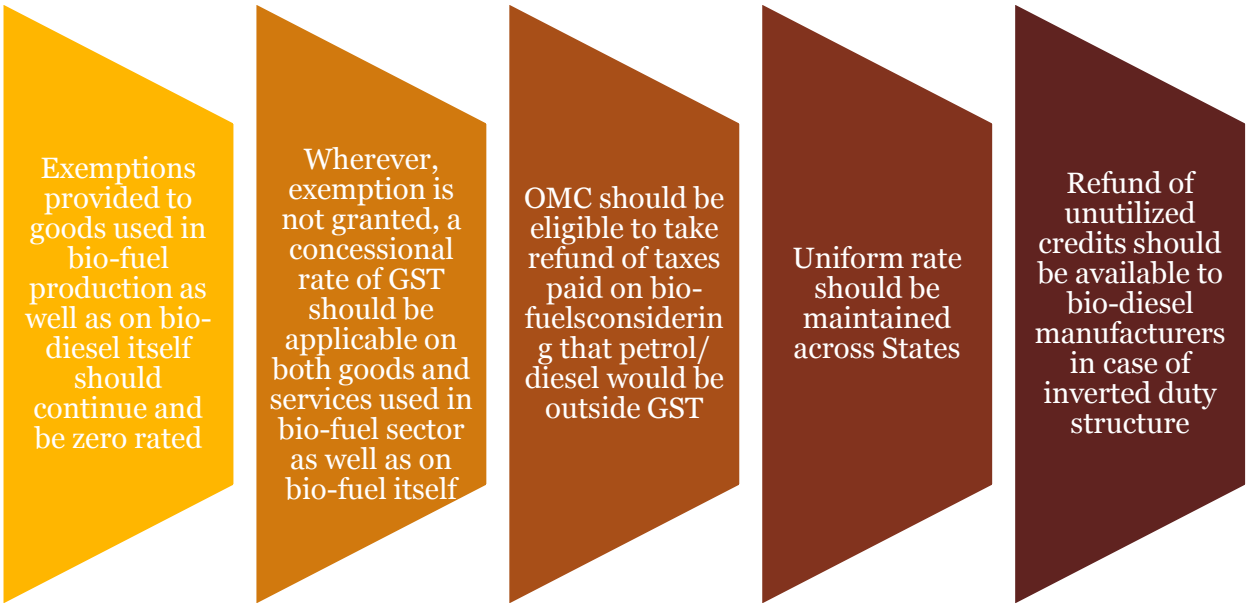
The key factors resulting in an adverse impact on cost of renewable energy are as under:

S.No.	Key factor	Comments
1	Removal of exemptions	Various exemptions are provided currently to capital goods and inputs used in renewable energy projects. The foundation of GST is based on pruning of exemptions as far as possible. Hence, if exemptions are pruned for goods used in renewable energy projects, there would be a significant increase in tax cost on procurements. Since all such taxes are (and would continue to be) non-creditable for renewable energy players, the same would be a cost and hence, increase cost of renewable energy.
2	Increase in tax rates	Currently, different tax rates are applicable depending on the nature of procurement. GST aims to provide a single rate for goods and services. The Select Committee has recommended that the standard GST rate should not exceed 20%. A GST rate of 20% would also be substantially higher than the rates currently applicable on procurement of goods and services in the renewable energy sector This would have an adverse impact as the taxes paid on procurements would increase the tax cost burden for the renewable energy sector.
3	Removal of statutory forms	In case of inter-State purchases, a concessional rate of CST of 2% is provided against issuance of statutory form (Form C) in case the goods are to be used in generation or distribution of electricity. GST is expected to be levied on all inter-State supplies, with availability of credit in destination States. It is likely that statutory forms (eg Form C) would be done away with under the GST regime. Hence, concessional rate of tax may not be available even if the goods are to be used in generation of distribution of electricity. IGST at 20% would be applicable on inter-State procurements along with an additional tax of 1%. This would lead to a substantial increase in tax costs as compared to the current regime having a direct impact the cost of renewable energy.

In line with the Governments initiatives of boosting the renewable energy sector, the following key recommendations should be kept in mind



Further, the following recommendations should be kept in mind for the bio-fuel sector:



Overview of current regime

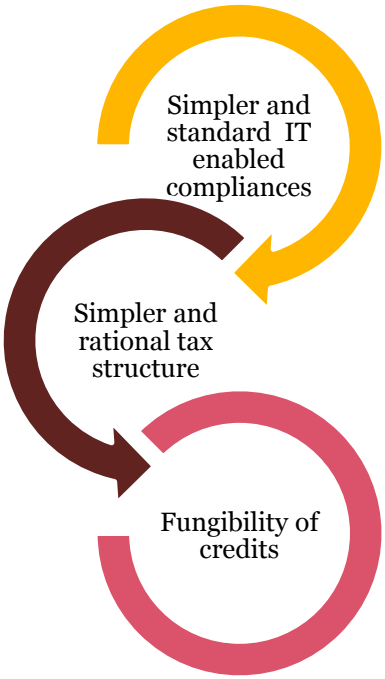
Various Indirect Taxes are levied currently by the State Government as well as Central Government on different transactions. A brief overview of the current Indirect tax environment is provided below for ease of reference:

Particulars	Taxing authority	Applicable on	General effective rate
Customs Duty : • BCD – 7.5% or 10% • ACD – 12.5% • Cess – 3% • SAD- 4%	Central Government	Import of goods from outside India	Peak rate 29.44%%. Capital goods generally attract duty at peak rate of 26.69%. Exact rates depend on nature of goods and end use
Excise duty	Central Government	Manufacture of goods in India	Peak rate is 12.5%. Exact rate depends upon nature of goods and end use
VAT	State Government	Sale of goods within the state	Varies from State to State; generally ranges between 5% -15%
CST	Central Government	Inter-state sale of goods	Rate is equal to VAT rate of displacing State – else 2% against Form C (which is also available for goods procured for generation of electricity)
Service tax	Central Government	Provision of services	Generic rate is 14.5%
Entry tax/Octroi	State Governments	Entry of goods into a local area for consumption/sale	Varies from State to State ranging between 1% - 14%
Research & Development Cess	Central Government	Import of technology into India under foreign collaboration	5%

There are exemptions granted under aforesaid laws (specifically for capital goods and inputs) used for setting up renewable energy devices. The same have been discussed subsequently in the report.

1. Overview of GST

The current Indirect tax regime in India provides for a complex tax environment due to multiplicity of taxes, elaborate compliance obligations and tax cascading. To address such problems, a comprehensive 'consumption tax' levied on the supply of all goods and services has been proposed which is known as GST. GST would subsume majority of Indirect taxes, thus, eliminating need for different Indirect tax legislations. Further, GST aims at providing a seamless credit chain by providing for cross utilization of credits (*inter se* goods and services) and minimal credit restrictions. GST is being touted as the single biggest Indirect Tax reform in India and aims at bringing a fundamental shift in the way business transactions are taxed in India



The motto of the GST regime seems to be 'One Tax One Market' which aims at providing a cohesive tax approach across India.

Besides simplifying the current system and lowering the costs of doing business, GST will call for a fundamental re-design of supply chains.

It will affect how companies operate their businesses, making GST not just a tax reform but an overall business reform.

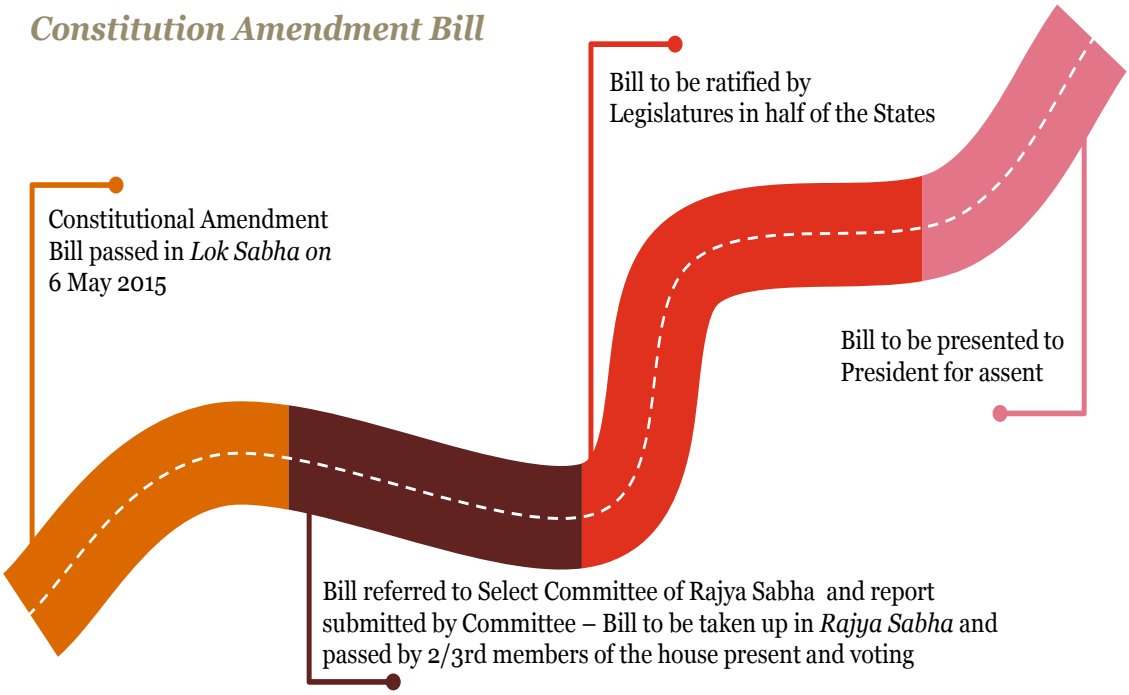
Given that India is a federal administrative structure with the Central Government existing alongside respective State Governments, GST in India must be commensurate with this governance structure. Accordingly, the dual GST model has been proposed. Under this model, the following taxes are chargeable on supply of goods and services:

- On within the state transactions - CGST (To be collected by the Central Government) and SGST (To be collected by the State Government)
- On interstate transaction
    - Sale of goods transactions: IGST - To be collected by the Central Government and additional 1%: To be collected by the origin state (applicable for a period of 2 years
    - Supply including provision of services (other than sale of goods transaction) - IGST
- On import of goods - BCD and IGST
- On import of services - IGST

Recent momentum of changes and progress reflects Governments intention to introduce GST at the earliest.

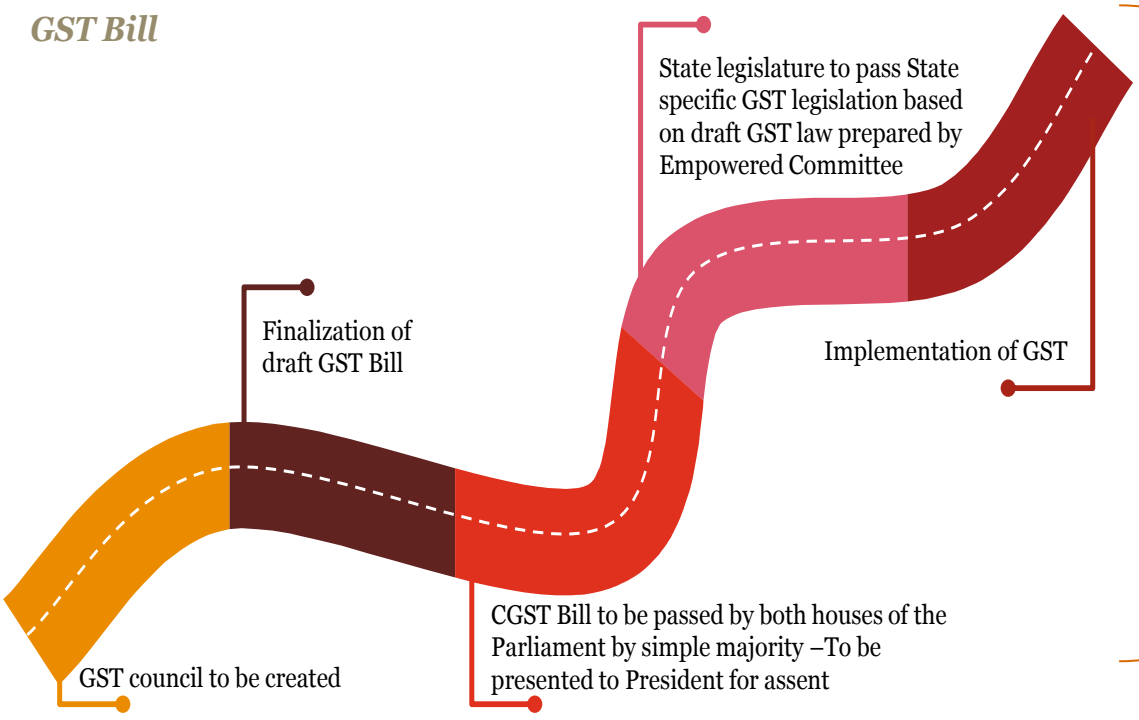
Provided below is a diagrammatic representation of the steps current state of play and steps required for implementation of GST:

Constitution Amendment Bill



Process for passing of Constitutional Amendment Bill in the Parliament

GST Bill



Process for enactment of GST laws

Draft reports on Registration, Refund, Payment of tax and Returns have already been released by Department of Revenue for public comments

Impact on GST on renewable energy sector

The power to legislate is engrafted under Article 246 of the Constitution of India and the various entries in the three lists of the Seventh Schedule are the 'fields of legislation' which provide power to the Central and State Government to govern various matters.

To enable levy of GST (which would be under a dual structure), various entries of the Constitution of India are proposed to be amended[1]/ modified and accordingly, various articles as well as entries of the Seventh Schedule are being subsumed and replaced by Articles enabling the GST implementation.

The power to levy taxes on consumption or sale of electricity has been provided to the State Government vide entry 53 of List II of Seventh Schedule of Constitution. However, such entry is not being subsumed and accordingly taxes on consumption or sale of electricity have been proposed to be kept outside GST. Therefore, the electricity generated by renewable sources would continue to be outside the GST regime and the State Government would have the power to continue to tax the same.

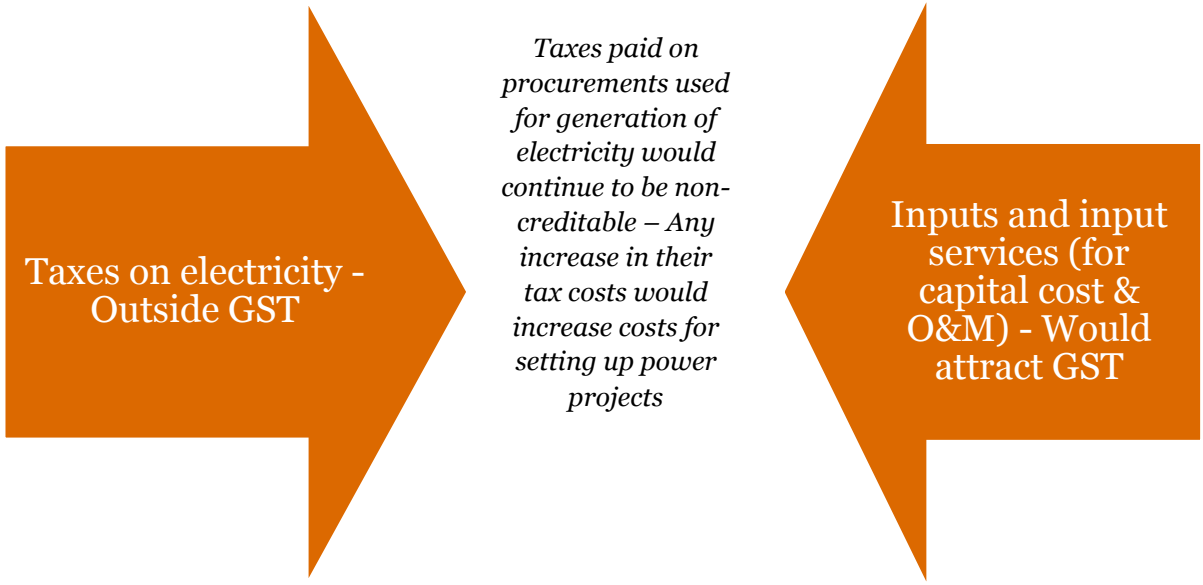
However, Entry 54 which empowers the States to levy tax on sale of goods has been subsumed as part of GST. The term 'goods' has been defined in the Constitution as 'goods include all materials, commodities, and articles'. Given the wide definition of the term 'goods', it may be argued that electricity qualifies as 'good'. This is also supported by judicial precedents and the fact that in various State VAT laws, electricity has been included in the category of 'exempted goods'. Also, electricity has been mentioned in the Excise Tariff. In light of the discussions, it is possible to consider electricity as goods and accordingly, technically possible to tax electricity under GST (as sale of goods).

Currently, tax on electricity is levied only under Entry 53 and it's specifically exempted/ excluded from levy under Entry 54.

It may be highlighted that for the purpose of this report has assumed that the same dispensation would continue (ie States would continue to tax electricity as presently under Entry 53 as this Entry has not been subsumed in GST) and that there would be no levy under GST on output electricity although Entry 54 has been subsumed in GST.

[1] Vide the Constitution (One Hundred and Twenty Second Amendment) Bill 2014

However, taxes on various inputs and input services (both capital cost as well as operation & maintenance costs) used for generation of renewable energy would be subject to GST.



GST is based on the foundation of credit fungibility and reduction of exemptions. Considering the fact that renewable energy sector currently benefits from various exemptions and concessional duty, the impact on the 'delivered cost of renewable energy' needs to be examined under the GST regime which is likely to eliminate/ reduce exemptions.

Further, specified petroleum products (such as petroleum crude, high speed diesel, petrol, aviation turbine fuel and natural gas). The outputs of the bio-fuel sector are also supplied as inputs to such OMCs for blending. Any GST charged on bio-fuels would become a cost to the OMCs.

Provided below are assumptions and comments on how the 'delivered cost of renewable energy' as well as the impact on the bio-fuel sector could be impacted in the GST regime.

2. Assumptions

Since the GST law is yet not available in public domain, the current exercise has been undertaken basis certain assumptions. For the purpose of this report, it has been considered the following assumptions for analyzing impact of GST on renewable energy sector:

GST Model

- The proposed model will be in the form of a 'Dual GST model' comprising the following:
  - CGST – levied by the Central Government
  - SGST - levied by the States Government
  - Inter-state and import transactions proposed to be covered under IGST to be levied by Central Government (likely tax rate to be sum of CGST and SGST)
- GST at the applicable rate would be levied on supply of all class of goods and services except those which are exempted/ excluded from GST
- Provider/ supplier/ seller of goods/ services would be liable to pay GST except in specified cases (such as import of services, few other specified services as may be specified under law where the recipient would be liable to deposit GST under reverse charge mechanism)
- For the purpose of this report, States would continue to tax electricity as presently under Entry 53 of the State List. As under current Indirect tax regime, no GST would be levied on electricity
- Petroleum products (petroleum crude, high speed diesel, motor spirit i.e. petrol, aviation turbine fuel and natural gas) would be kept outside GT unless otherwise notified by the GST council
- Provided below is summary of key taxes to be subsumed and to be kept outside the ambit of GST:

Taxes be subsumed	Taxes kept outside of GST
• Central levies - ACD - SAD - Central Excise - Service Tax - CST - Central Surcharges and Cesses related to supply of goods and services • State levies - State VAT - Other state levies such as Luxury tax, Octroi, Entry tax, Purchase Tax Entertainment tax, etc - State Surcharges and Cesses related to supply of goods and services - Medicinal and Toilet Preparations (Excise Duties) Act, 1955	• BCD • Stamp duty • Taxes and duties on electricity • Taxes and duties on alcohol for human consumption

GST rate

- Currently, there is no clarity on the rate of CGST, SGST and IGST. For the purpose of the preparation of the report, the rate of taxes is proposed to be assumed as below :

  - SGST – 10% (uniform across all states)
  - CGST – 10%
  - IGST – 20%[2]

  Select Committee of Rajya Sabha also indicated that the standard GST rate should not be more than 20%. Further, the Committee also recommended a concessional rate of GST of 14%. The Chief Economic Advisor has recommended GST rates as under:

  - RNR has been computed at 15 - 15.5%
  - Standard rate: 17% - 18% - Rate dependent upon various factors including status of exemptions, tax rate on precious metals
  - Lower rate: 12% - Applicable on essential goods. No specific recommendation for essential services
  - Demerit rate: 40% - applicable on luxury cars, tobacco products

  However, no information is available on the goods and services on which such reduced rate would apply. Therefore, for the purpose of computing maximum possible impact under GST regime (basis information currently available), the peak rate of 20% has been assumed for both goods and services used for setting up renewable power project in this report.

- The rate of tax on goods and services has been assumed to be the same ie 20% based on the current information

- Additional tax

  - Central Government will levy an additional tax not exceeding 1 % on inter-state supply of goods for 2 years which would be non-creditable
  - No additional tax on stock transfers – As per recommendation of the Select Committee, additional tax be levied only on supplies for a consideration
  - Additional tax would be levied on each inter-State sale transaction

- Imports

  - Imports would attract both BCD and IGST in lieu of the current additional duties/ cess of Customs
  - BCD rate would remain the same as under current regime
  - IGST on imports to be computed on assessable value plus BCD amount
  - No additional tax would be levied on imports

- Works contract transactions to be classified as 'services' (whether classified as goods or service, the rate is same and no credit is available for either)

- Abatement on GTA services would continue at 70% and tax would be payable at balance 30% only

Others

[2] Select Committee has also indicated that rate should not exceed 20% for general category and 14% for concessional rate

- Generation of electricity and supply thereof would be exempt from GST
- No exemption/ concessions will be available on supply/ procurement of renewal energy devices as well as components/ parts of such devices under GST law
- Similarly, no exemptions/ concessions will be available on services procured for setting up and operating power project/ plant
- Exemption/ concessions provided to bio-fuel sector as well as its inputs would be done away with
- For the purpose of the report, assumptions on cost of generation of electricity (in respect of grid projects) have been taken based on information available under the Tariff Orders issued by the CERC
- Assumptions as to structure for procurement of inputs/ components and services have been taken basis mutual discussion with the stakeholders in the industry and MNRE

3. Methodology

Summarized below are the key steps followed for undertaking GST impact assessment:

- Finalization of the list of projects for which impact assessment to be conducted basis information available and discussions with MNRE

- Identification of the key indicators (such as Levelised Tariff, Total COG etc.) for each project for which impact is to be analyzed.

- List of projects with key indicator and key source of information for computing the possible impact has been tabulated below:

S.No	Project	Key indicators	Key Source of information on mechanism of computation of Indicators
1	Wind Projects	Levelised Tariff	CERC order dated 31 March 2015 (Annexure 1A)
2	Solar PV Projects	Levelised Tariff	CERC order dated 31 March 2015 (Annexure 5A)
3	Small Hydro Projects	Levelised Tariff	CERC order dated 31 March 2015 (Annexure 2A and Annexure 2C)
4	Biomass Power Projects	Total COG and applicable tariff (FY 2015-16)	CERC order dated 31 March 2015 (Annexure 3.1A to 3.1H)
5	Biomass Gasifier Projects	Total COG and applicable tariff (FY 2015-16)	CERC order dated 31 March 2015
6	Wind Solar Hybrid Projects	Capital cost and Annual maintenance charges	Information received from developers
7	Solar Off-grid Projects	Capital cost and Annual maintenance charges	Information received from MNRE

- Understanding contribution of different factors (such as beak-up of capital cost, source of funds) in computation of the above key indicators of cost of electricity. Following factors have an impact under GST regime:

  - **Capital Cost:** One time cost for setting-up of the project;
  - **Operation & Maintenance (O&M) charges:** Annual charges for operation and maintenance of plant; and
  - **Others** – Cost of major input such as Biomass in respect of Biomass project

- Computation of tax element in respect of different components of capital cost, O&M charges and biomass cost, basis reasonable assumptions, under the current regime and proposed GST regime:

(i) Computation of impact on indirect tax costs in respect of capital cost under GST regime - Methodology

- Capital cost generally includes cost of plant and machinery, civil construction, erection services, transportation services etc. As a first step, break-up capital cost for different project was identified Basis discussions, finalizing assumption regarding pattern of procurements ie whether components, plant and machinery or any other goods would be imported, procured on inter-state basis or within the state

- Apportion value of each component according to assumed source of procurement (imported, within-state procurements or inter-state procurements)

- Break-up of capital cost along with assumptions on source/ nature of procurement considered for each type of project has been tabulated below:

Wind Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	Wind operated electricity generator, its components and parts including rotor and wind turbine controller (Goods)	69%	30%	35%	35%
2	Transformer (Goods)	2%	-	100%	-
3	Transportation (Services)	5%	-	50%	50%
4	Other services	24%	-	50%	50%
	TOTAL	**100%**			

*[*Source for share in capital cost: Page 47 of Statement of Objects and Reasons CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012]*

Solar PV Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	PV Modules (Goods)	55%	100%	-	-
2	Land cost (Assumed as services)	4%	-	100%	-
3	Civil and General Works- (Assumed only installation services)	8%	-	50%	50%
4	Mounting structures (Goods)	8%	-	-	100%

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
5	Power conditioning unit (Goods)	7%	-	100%	-
6	Evacuation Cost up to Inter-connection unit (Cables and Transformers) (Goods)	9%	-	50%	50%
7	Preliminary and Pre-operative expenses including IDC and contingency (Services)	8%	-	50%	50%
	TOTAL	**100%**			

*[*Source for share in capital cost: Page 18 of CERC order dated 31 March 2015 "determination of Benchmark Capital Cost Norm for Solar PV power projects and Solar Thermal power projects applicable during 2015-16]*

Small Hydro Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Basis information received and assumptions)		
			Import	Within-state	Inter-state
1	Civil work (Goods portion)- Cement	12%	-	100%	-
2	Civil work (Goods portion)- Steel structural	9%	-	100%	-
3	Civil work (Goods portion)- Other goods	9%	-	100%	-
4	Civil work (Services)	20%	-	100%	-
5	Electrical- Turbine and Generator (Goods)	29%	27%	36.5%	36.5%
6	T&D- Cable and Transformers (Goods)	4.8%	-	50%	50%
7	Land, administrative, miscellaneous charges, etc. (Services)	17.2%	-	50%	50%
	TOTAL	**100%**			

*[*Source: MNRE]*

Biomass Power Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	Land and site Development- (Assumed Services)	2.42%	-	50%	50%
2	Civil- (Cement)	3.58%	-	100%	-
3	Civil- (Steel structural)	2.69%	-	100%	-
4	Civil- (Others goods)	2.69%	-	100%	-
5	Civil- Services	5.97%	-	100%	-
6	Plant and machinery- (Goods)	68.01%	30%	35%	35%
7	Miscellaneous Fixed Assets (Goods)	2.80%	-	100%	-
8	Contingencies	11.84%	-	50%	50%
	TOTAL	**100%**			

*(*Source: Indian Renewable Energy Department Agency Limited and MNRE)*

Biomass Gasifier Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	Plant and machinery (Goods)	90%	30%	35%	35%
2	Erection, Commissioning & Training (Services)	10%	-	50%	50%
	TOTAL	**100%**			

*[*Source: Information received from Industry players]*

Wind Solar Hybrid Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	Wind solar hybrid system (Goods)	86%	-	100%	-
2	Transportation (Services)	4%	-	100%	-
3	Installation and commission (Services)	10%	-	100%	-
	TOTAL	**100%**			

*[*Source: Information received from Industry players and developers]*

Solar Off-grid Projects

S.No	Cost category	Share in capital cost* (%)	Source of procurement (Assumed)		
			Import	Within-state	Inter-state
1	Solar Panel (Goods)	30%	80%	20%	-
2	Battery (Goods)	36%	30%	70%	-
3	Power conditioning unit (Good)	19%	35%	65%	-
4	Structure (Goods)	4%	-	100%	-
5	Cable (Goods)	2%	-	100%	-
6	Monitoring systems (Goods)	1%	35%	65%	-
7	Installation cost (Services)	7%	-	100%	-
	TOTAL	**100%**			

*[*Source: MNRE]*

- Basis nature and source of procurement, mapping current indirect tax rates against each component of capital costs

- Computation of total indirect tax applicable under current regime for each component. Under current regime, indirect taxes paid on procurements are non-creditable and hence, form part of costs. Accordingly, it has been assumed that the above taxes (computed) have been included in the respective capital costs.

  Considering the same, the computed taxes have been reduced from the value of capital costs to arrive at a tax exclusive value of capital cost;

- Computation of taxes applicable under GST regime. For this purpose, GST rates (basis assumptions mentioned in previous section) were applied on each relevant component of capital costs

- Comparison of indirect tax costs under current regime and the proposed GST regime

(ii) <u>Computation of impact on indirect tax costs in respect of O&M charges under GST regime - Methodology</u>

- Mapping of tax rates applicable on various components of O&M charged under current regime.
- Basis the same, computation of to compute O&M charges excluding taxes.
- Map tax rates applicable under GST regime to calculate O&M charges (inclusive of taxes under GST regime).
- Comparison of indirect tax costs under current regime and the proposed GST regime.

(iii) <u>Computation of biomass cost under GST regime</u>

While for other types of renewable energy projects (ie solar, wind or hydro, generally there is no input costs other than capital cost and O&M cost discussed above), in case of bio-mass project there is additional cost of inputs ie biomass. Accordingly, in these projects cost of biomass also needs to be computed under both current and GST regime as under"

- Map tax rates applicable under current regime to compute biomass cost excluding taxes. For this purpose the rate of VAT on biomass related inputs has been considered at lower rate under each of the relevant State VAT law. Please note that the same could vary depending on the type of inputs being used.
- Map tax rates applicable under GST regime to calculate biomass cost inclusive of taxes under GST regime.
- Comparison of indirect tax costs under current regime and the proposed GST regime
- Additionally, to demonstrate the impact of state levy under current indirect tax regime as well as GST, an exercise has been conducted considering the following relevant state for each type of project:

Wind	Solar PV	Small Hydro	Biomass Power	Biomass Gasifier	Wind Solar hybrid	Solar Off-grid
Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu	Tamil Nadu
Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra
Gujarat	Gujarat	Andhra Pradesh	Andhra Pradesh	Andhra Pradesh	Gujarat	Gujarat
Rajasthan	Rajasthan	Arunachal Pradesh	Karnataka	Karnataka	Rajasthan	Rajasthan
Andhra Pradesh	Andhra Pradesh	Karnataka	Punjab	Punjab	Andhra Pradesh	Andhra Pradesh
Telangana	Telangana	Sikkim	Uttar Pradesh	Uttar Pradesh	Telangana	Telangana
Madhya Pradesh	Madhya Pradesh	Himachal Pradesh	Haryana	Haryana	Madhya Pradesh	Madhya Pradesh
Kerala	Karnataka	Uttarakhand	Chhattisgarh	Chhattisgarh	Kerala	Karnataka
	Punjab					Punjab

Please note that the above States have been considered only to demonstrate different level of impact on account of variation in current VAT applicability on different components procured for setting up of power projects/ plants. The exercise has been undertaken using CERC order (for determining levelised tariff) to ensure parity in comparison and have accordingly, not referred to the State wise tariff orders.

- GST impact only has been analyzed for the goods, services procured by the developer for setting up of power plant/ project. As part of this study, impact of GST on vendors manufacturing goods meant for supply to or rendering services to the project owner/ developer has not been examined.

- Further, in relation to the bio-fuel sector, since the output is not electricity but various types of bio-fuels, the impact of GST on the input and output in various States (Karnataka, Maharashtra, Punjab, Tamil Nadu and Uttar Pradesh) has been compared.

- Such input tax costs of manufacturers and other vendors have not been considered due to the following:

    - Various Indirect tax benefits/ concessions provided to goods to be used in renewable energy projects are also available to parts/ accessories etc which may be procured by manufacturer/ supplier to be supplied to project owner. Hence, it would not be the case that manufacturer/ supplier would be paying taxes on all their procurements and no exemptions/ concessions would also be available to them. In such case, the contention that GST impact would be only on the value addition of the manufacturer/ supplier may not be technically correct as pruning of exemptions would impact the input cost of such manufacturer/ supplier as well.

    - For various renewable energy projects (such as solar projects), a portion of capital goods may be imported from outside India. For such imported supplies, no input taxes on their parts would be payable in India. Accordingly, introduction of GST would not have an impact of cost of manufacture of such imported supplies.

    - The purpose of exercise was to provide the maximum possible GST impact on various renewable energy projects, so as to understand the possible GST implications and identify key recommendations. Consideration of input taxes for manufacturers would only to a certain extent reduce the possible GST impact and therefore, the same were not taken into account at this stage.

4. Impact of GST on various segments of renewable energy sector

As discussed above, GST impact on the following sources of renewable energy has been analyzed:

- Solar PV
- Wind
- Biomass
- Small Hydro
- Solar Off-grid
- Wind Solar Hybrid
- Biomass Gasifier
- Bio-fuel sector

It is expected that the exemptions/ concessions prescribed under various current indirect tax laws would be pruned under GST regime. This would have a significant impact on the cost of renewable energy. In order to compute the possible impact, it would be first important to analyze the exemptions available under the current regime.

The following exemptions (provided by the Central as well as State Government) are applicable on most of the renewable energy projects:

(i) BCD – General exemptions/ concessions

The following exemptions/ concessions from BCD are available generally for goods/ equipment used in various renewable energy plants:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 12/2012-Customs, dated 17 March 2012	369	84 or any other chapter	All goods, for renovation or modernization of a power generation plant (other than captive power generation plant)	5%
	510	9801	All goods (Project imports)	5%

(ii) SAD – General exemptions

The following exemptions/ concessions from SAD are available generally:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
102/2007 – Customs dated 14 September 2007	NA	Any chapter	When goods are imported into India for subsequent sale (on which VAT/ CST is paid, i.e. trading activity), SAD paid at the time of import is allowed as refund to the importer.	Refund of SAD

(iii) Excise duty – General exemptions

The following exemptions/ concessions from excise duty are available generally for goods/ equipment used in various renewable energy plants:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
12/2012-Excise dated 17 March 2012	332	Any chapter	Non-conventional energy devices or systems specified in List 8	Nil
	332A	Any chapter	Parts consumed within the factory of production for the manufacture of goods specified in List 8 List 8 includes: (11) Solar photovoltaic module and panel for water pumping and other applications (13) Wind operated electricity generator, its components and parts thereof including rotor and wind turbine controller	Nil
	336	Any chapter	All goods supplied against International Competitive Bidding	Nil

(iv) VAT – General exemptions/ concessions for renewable energy

S.No.	State	Description	Rate	Relevant provision
1	Andhra Pradesh	Renewable energy devices and spare parts	5%	Schedule IV Entry 53
2	Arunachal Pradesh	Renewable energy devices & spare parts	4%	Schedule III Entry 59
3	Chhattisgarh	Renewable energy devices and spare parts	5%	Schedule II Part II Entry 96
4	Gujarat	Renewable energy devices and components and parts thereof	5%	Schedule II Entry 61 Section 7 (1A)
5	Haryana	Renewable energy devices, components and spare parts thereof	5.25%	Schedule C Entry 75
6	Himachal Pradesh	Renewable energy devices and parts thereof	5%	Schedule A Part II Entry 88
7	Jammu & Kashmir	Renewable energy devices and spare parts thereof	5%	Schedule C Entry 113
8	Karnataka	Renewable energy devices and parts thereof	5.5%	Third Schedule Entry 80
9	Kerala	Renewable energy devices and spare parts… (1) Wind turbine/engine (2) Parts of turbine/engine (17) Wind mills and any special designed devices which runs on wind mills (18) Any special devices including electric	5%	Schedule III Entry 107

S.No.	State	Description	Rate	Relevant provision
		generators pumps running on wind energy"		
10	Madhya Pradesh	Renewable energy devices or equipment, including their parts, that is to say ... 10. Solar power generating system 11. Solar photo-voltaic modules and panels for water pumping and other applications 12. Windmills and any specially designed devices which run on windmills 13. Any special devices including electricity generators and pumps running on wind energy"	0%	Schedule I Entry 71
11	Maharashtra	Renewable energy devices as may be notified, from time to time, by the State Government in the Official Gazette and spare parts thereof. -Wind mills and any specially designed services which run on wind mills. - Any special devices including electric generators and pumps running on wind energy. -Agricultural and municipal waste conversion devices producing energy	5%	Schedule C Entry 82 (Read with Notification No. VAT-1505/CR-119/Taxation 1 Dated 1st April, 2005)
12	Punjab	Renewable energy devices and spare parts	6.05%	Schedule B (Entry 94)
13	Rajasthan	A) Solar energy equipment B) Plant and Machinery including parts thereof, used in generation of Electricity, from- (a) Solar Energy;(b) Wind Power: "	0%	Schedule I (Entry 107 & 135)
14	Sikkim	Renewable energy devices & spare parts	4.5%	Schedule III Entry 61
15	Tamil Nadu	Renewable energy devices and spare parts other than those specified in the Fourth Schedule	5%	First Schedule Part B Entry 117
16	Telangana	Renewable energy devices and spare parts	5%	Schedule IV Entry 53
17	Uttar Pradesh	Renewable Energy devices and spare parts which are not included in any other Schedule	5%	Schedule II Entry 108
18	Uttarakhand	Renewable energy devices and equipment generating or utilizing renewable sources of energy including those detailed below, and their spare parts:	0%	Schedule I Entry 49

(v) <u>CST – General exemptions/ concessions for renewable energy sector</u>

S.No.	Description	Rate	Relevant provision
1	Goods purchased for use in the generation or distribution of electricity or any other form of power when Form C is provide by buyer to vendor	2%	Section 8

6.1 Solar energy - Impact

To boost the solar energy industry, various exemptions have been provided by both Central as well as State Government for setting up, operation as well as maintenance of solar energy sector.

Provided below is a summary of exemptions which are provided currently to the solar energy sector (in addition to the general exemptions mentioned above which are available for various renewable energy sectors which have been discussed earlier).

(i) BCD - Specific exemptions for solar plants

The following specific exemptions/ concessions from BCD are available for goods/ equipment used in solar power plant:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 01/2011-Customs, dated 6 January 2011	NA	Any Chapter	All items of machinery, including prime movers, instruments, apparatus and appliances, control gear and transmission equipment, and auxiliary equipment (including those required for testing and quality control) and components, required for initial setting up of a solar power generation or solar energy production project or facility	BCD - 5% ACD – Nil
No. 24 /2005-Customs,dated 1 March 2005	3	8541	Covers tariff heading 8541 40 11 i.e. solar cells whether or not assembled in modules or panels	BCD - Nil

(ii) SAD - Specific exemptions for solar plants

The following specific exemptions/ concessions from SAD are available for goods/ equipment used in solar power plant

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 21/2012-Customs, dated 17 March 2012	14	Any Chapter	All items of machinery including prime movers, instruments, apparatus and appliances, control gear and transmission equipment and auxiliary equipment (including those required for testing and quality control) and components required for setting up of a solar power generation or solar energy production project or facility	Nil

(iii) Excise duty - Specific exemptions for solar plants

The following specific exemptions/ concessions from excise duty are available for goods/ equipment used in solar power plant

Notification	Entry	Chapter heading	Description of goods	Concessional rate
Notification no. 15/2010-CE dated 27 February 2010	NA	Any chapter	All items of machinery, including prime movers, instruments, apparatus and appliances, control gear and transmission equipment and auxiliary equipment (including those required for testing and quality control) and components, required for initial setting up of a solar power generation project or facility	Nil

(iv) VAT/ CST - Specific exemptions for solar plants

The following specific exemptions/ concessions from VAT/ CST are available for goods/ equipment used in solar power plant

State	Reference	Description	Concessional rate
Maharashtra	Schedule A Entry 56 (Read with Notification No. VAT-1509/CR-81-B(1)/Taxation 1.- Dated 29th June 2009)	-Solar power generating systems -Solar photovoltaic modules and panels, for water pumping and other applications	Nil
Karnataka	Notification No. No. FD 71 CSL 2015 Dated: 1st August, 2015	Solar PV Panels	Nil
Jammu & Kashmir	Schedule C (Entry 40A)	Solar energy equipment including solar cookers, Solar Heaters, Solar Dyers, Solar Lantern and Solar Street Lighting	Nil
Uttar Pradesh	Schedule 1 (Entry 13)	Solar Energy devices, Solar Energy equipment and parts thereof	Nil
Chhattisgarh	Notification No. F-10/15/2012/CT/V (20) Dated 31st March, 2012	Solar energy equipment and components [Exemption is available for the period from 01-04-2012 to 31-03-2016]	Nil
Rajasthan	Schedule I (Entry 107 & 135)	A) Solar energy equipment B) Plant and Machinery including parts thereof, used in generation of Electricity, from- (a) Solar Energy…	Nil

Analyzed below are the exemptions on various components for solar GRID as well as off-GID projects.

6.1.1 Solar PV (GRID)

The following break-up for capital cost and O&M for a solar PV GRID project has been considered

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
PV Modules	54.86%	Entirely imported	No customs duty is applicable as full exemption is available from BCD, ACD as well as SAD (as highlighted above)	BCD exemption could continue. However, there would be additional IGST of 20%	Removal of exemptions - Increase in cost
Land cost	4.13%	On lease	Service tax applicable at 14.5%	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate – Increase in cost
Civil and General Works	8.25%	Only installation services procured 50% within the State and 50% from outside the state	Service tax applicable at 14.5%	• Inter-State – IGST applicable at 20% • Intra-State - CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate – Increase in cost
Mounting structures	8.25%	Procured on inter-State basis	• Excise duty – Exempt • CST - Applicable at 2% (against Form C)	IGST would be applicable at 20%. Further, additional tax at 1% would also be applicable	Removal of benefit against statutory forms would increase tax rate - Increase in cost
Power conditioning unit	7.43%	Procured within the State	• Excise duty – Exempt • VAT - Applicable at concessional rate provided by State (as highlighted above)	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate due to removal of exemptions/ concessions – Increase in cost

Evacuation Cost up to Inter-connection unit	9.08%	Considered as goods – Procured 50% from within the State and 50% from outside the State	• Excise duty - Exempt • CST applicable at 2% for inter-State procurements • VAT applicable at concessional rate provided by State for intra-State procurements	• Inter-State – IGST applicable at 20% plus additional tax of 1% • Intra-State - CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate due to removal of exemptions/ concessions – Increase in cost
Preliminary and Pre-operative expenses including IDC and contingency	8.01%	Considered as services – Procured 50% from within the State and 50% from outside the State	Service tax applicable at 14.5%	• Inter-State – IGST applicable at 20% • Intra-State - CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate – Increase in cost
Operation and maintenance					
O&M	100%	Assumed as works contract – from within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact to be analyzed based on current rate applicable for each State

The State wise impact on the levelised tariff is summarized below[3]:

Solar PV Project				
State	**Levelised Tariff in current regime (Rs. Per unit)**	**Levelised Tariff in GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	7.04	8.04	14.26%	▼
Maharashtra	7.04	8.09	14.91%	▼
Gujarat	7.04	8.04	14.17%	▼
Rajasthan	7.04	8.13	15.51%	▼
Andhra Pradesh	7.04	7.96	13.07%	▼

[3] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

Telangana	7.04	7.96	13.07%	
Madhya Pradesh	7.04	8.13	15.51%	
Karnataka	7.04	7.95	12.90%	
Punjab	7.04	7.96	13.05%	

6.1.2 Solar off-GRID

The following break-up for capital cost and O&M for a solar off-GRID project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Solar Panel	29.96%	80% imported and 20% procured within the State	• Import - No customs duty is applicable as full exemption is available from BCD, ACD as well as SAD (as highlighted above) • Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above)	• Import - BCD exemption would continue. However, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20%	Removal of exemptions and increase in tax rate would increase costs
Battery	35.96%	30% imported and 70% procured within the State	• Import – Customs duty is applicable at 5.15% (BCD of 5% and cess) - ACD and SAD are exempt • Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above)	• Import - BCD would continue to be levied at concessional rate of 5%. Further, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20%	Removal of exemptions/ concessions and increase in tax rate would increase costs
Power conducting	18.73%	35% imported and 65% procured	• Import – Customs duty	• Import - BCD would	Removal of exemptions

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
units		within the State	is applicable at 5.15% (BCD of 5% and cess of 3%) – ACD and cess are exempt • Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above)	continue to be levied at concessional rate of 5%. Further, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20%	and increase in tax rate would increase costs
Structure	4.49%	Procured within the State	• Excise duty – Exempt • VAT - Applicable at concessional rate provided by State (as highlighted above)	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate due to removal of exemptions/ concessions – Increase in cost
Cable	2.25%	Procured within the State	• Excise duty – Exempt • VAT - Applicable at concessional rate provided by State (as highlighted above)	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate due to removal of exemptions/ concessions – Increase in cost
Monitoring systems	1.12%	35% imported and 65% procured within the State	• Customs duty – 5.15% • Excise duty – Exempt • VAT - Applicable at concessional rate provided by State (as highlighted above)	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate due to removal of exemptions/ concessions – Increase in cost
Installation costs	7.49%	Considered as services – Procured within the State	Service tax applicable at 14.5%	CGST and SGST would be applicable at 20%	Rate under GST would be higher than current rate – Increase in cost

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Operation and maintenance					
O&M	100%	Assumed as works contract - within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State

The State wise impact on the capital cost and O&M cost is summarized below[4]:

Solar off-GRID projects				
State	**Capital cost and AMC charges n current regime (in Rs.)**	**Capital cost and AMC charges in GST regime (in Rs.)**	**% increase**	**Impact**
Tamil Nadu	14,38,577	16,77,461	16.61%	
Maharashtra	14,04,915	16,77,461	19.40%	
Gujarat	14,38,327	16,77,461	16.63%	
Rajasthan	14,06,415	16,77,461	19.27%	
Andhra Pradesh	14,35,252	16,77,461	16.88%	
Telangana	14,35,252	16,77,461	16.88%	
Madhya Pradesh	14,06,415	16,77,461	19.27%	
Karnataka	14,33,881	16,77,461	16.99%	
Punjab	14,42,636	16,77,461	16.28%	

[4] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

6.2 Wind energy - Impact

Various exemptions have been provided to the wind energy sector as measure to ensure its growth.

Provided below is a summary of exemptions which are provided currently to the wind energy sector (in addition to the general exemptions mentioned above which are available for various renewable energy sectors which have been discussed earlier).

(i) BCD

The following specific exemptions/ concessions from BCD are available for goods/ equipment used in wind power plant:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 12/2012-Customs, dated 17 March 2012	335A	7326 90 99	Forged steel rings for manufacture of special bearings for use in wind operated electricity generators	BCD - 5%
	362	84 or any other Chapter	The following goods, namely:- (i)Wind operated electricity generators upto 30 KW and wind operated battery chargers upto 30 KW (2) Parts of wind operated electricity generators, for the manufacture or the maintenance of wind operated electricity generators, namely: (a) Special bearings, (b) Gear box, (c) Yaw components, (d) Wind turbine controllers, and (e) Parts of the goods specified at (a) to (d) (3) Blades for rotor of wind operated electricity generators, for the manufacture or the maintenance of wind operated electricity generators (4) Parts for the manufacture or the maintenance of blades for rotor of wind operated electricity generators (5) Raw materials for the manufacture of - (a) blades for rotor of wind operated electricity generators, or (b) parts, sub-parts of such blades	BCD - 5%
	363	84 or any other Chapter	Permanent magnets for manufacture of PM synchronous generators above 500KW for use in wind operated electricity generators	BCD – 5%

(ii) SAD

The following specific exemptions/ concessions from SAD are available for goods/ equipment used in wind power plant

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 21/2012-Customs, dated 17 March 2012	14C	Any Chapter	Parts and raw materials required for use in the manufacture of wind-operated electricity generator	Nil

(v) Excise duty

The following specific exemptions/ concessions from excise duty are available for goods/ equipment used in wind power plant

Notification	Entry	Chapter heading	Description of goods	Concessional rate
12/2012-Excise dated 17 March 2012	327	32,38,39,44 or 70	Goods specified in List 9 (refer notification), for the manufacture of rotor blades and intermediates, parts and sub-parts of rotor blades, for wind operated electricity generators	Nil

(vi) VAT/ CST

The following specific exemptions/ concessions from VAT/ CST are available for goods/ equipment used in wind power plant

State	Reference	Description	Concessional rate
Rajasthan	Schedule I (Entry 135)	Plant and Machinery including parts thereof, used in generation of Electricity, from- (a) Solar Energy;(b) Wind Power: "	Nil

6.2.1 Wind GRID

Following break-up for levelised tariff for a Wind GRID project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Wind operated electricity generator, its components and parts thereof including rotor and wind turbine controller	69.14%	30% parts are imported, 35% are procured within the State and 35% are procured on inter-State basis	• Import - Customs duty is applicable at 5.15% (BCD of 5% and 3% cess) - ACD and SAD are exempt • Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above) • Inter-State procurements – Excise duty is exempt. CST is applicable at 2% against Form C	• Import - BCD exemption could continue. However, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20% • Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	Removal of exemptions and increase in tax rate would increase costs
Transformer	2.06%	Procured within the State	Excise duty is applicable at 12.5% VAT is applicable at concessional rate provided by State (as highlighted above)	Intra-State procurements – CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Transportation	5.15%	50% procured within the State and 50% procured on inter-State basis	Service tax applicable at 4.35% (30% of 14.5%)	• Inter-State – IGST applicable at 6% (30% of 20%) Intra-State - CGST and SGST would be applicable at 3% each i.e. total	Increase in tax rate would increase costs – Further, impact would be there if abatement is removed/ changed

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
				6% (30% of 20%)	
Services	23.66%	50% procured within the State and 50% procured on inter-State basis	Service tax applicable at 14.5%	• Inter-State – IGST applicable 20% • Intra-State - CGST and SGST would be applicable total 20%	Increase in tax rate would increase costs
Operation and maintenance					
O&M	100%	Assumed as works contract - from within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State

The State wise impact on the levelised tariff is summarized below[5]:

Wind Projects				
State	**Levelised Tariff in current regime (Rs. Per unit)**	**Levelised Tariff in GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	6.58	7.39	12.27%	▼
Maharashtra	6.58	7.40	12.35%	▼
Gujarat	6.58	7.39	12.19%	▼
Rajasthan	6.58	7.51	14.12%	▼
Andhra Pradesh	6.58	7.33	11.28%	▼
Telangana	6.58	7.33	11.28%	▼
Madhya Pradesh	6.58	7.51	14.12%	▼
Kerala	6.58	7.40	12.43%	▼

[5] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

6.2.2 Wind-Solar hybrid – Off-GRID

The following breakup for capital cost and O&M for a Wind GRID project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Wind –solar hybrid system	86.50%	Procured within the state	Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above)	CGST and SGST would be applicable at 20%	Removal of exemptions and increase in tax rate would increase costs
Transportation	3.86%	Assumed entirely services procured within the State	Service tax applicable at 4.35% (30% of 14.5%)	CGST and SGST would be applicable at 3% each i.e. total 6% (30% of 20%)	Increase in tax rate would increase costs – Further, impact would be there if abatement is removed/ changed
Installation and commissioning at site	9.64%	Assumed entirely services procured within the State	Service tax applicable at 14.5%	CGST and SGST would be applicable at total 20%	Increase in tax rate would increase costs
Operation and maintenance					
O&M	100%	Assumed as works contract - within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State

The State wise impact on the capital cost and O&M cost is summarized below[6]:

Wind-Solar hybrid off-GRID projects				
State	**Capital cost and AMC charges n current regime (in Rs.)**	**Capital cost and AMC charges in GST regime (in Rs.)**	**% increase**	**Impact**
Tamil Nadu	16,38,325	18,37,680	12.17%	▼
Maharashtra	16,37,150	18,37,680	12.25%	▼
Gujarat	16,39,500	18,37,680	12.09%	▼
Rajasthan	15,74,030	18,37,680	16.75%	▼
Andhra Pradesh	16,53,953	18,37,680	11.11%	▼
Telangana	16,53,953	18,37,680	11.11%	▼
Madhya Pradesh	15,74,030	18,37,680	16.75%	▼
Punjab	16,35,975	18,37,680	12.33%	▼

[6] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

6.3 Bio mass energy - Impact

To boost the bio- energy industry, various exemptions have been provided by both Central as well as State Government for setting up, operation as well as maintenance of solar energy sector.

Provided below are summary of exemptions which are provided currently to the bio-energy sector (in addition to the general exemptions mentioned above which are available for various renewable energy sectors which have been discussed earlier).

(i) BCD

The following specific exemptions/ concessions from BCD are available for goods/ equipment used in biomass plant:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
No. 81/2005-Customs dated 8 September 2005	NA	Any chapter	All items of machinery, including prime movers, instruments, apparatus and appliances, control gear and transmission equipment, and auxiliary equipment (including those required for testing and quality control) and components, required for initial setting up of a project for generation of power or generation of compressed bio-gas (Bio-CNG) using non-conventional materials, namely, agricultural, forestry, agro-industrial, industrial, municipal and urban waste, bio waste or poultry litter	BCD - 5% ACD - Nil

(ii) Excise duty

The following specific exemptions/ concessions from excise duty are available for goods/ equipment used in biomass plant

Notification	Entry	Chapter heading	Description of goods	Concessional rate
33/2005-Excise dated 8 September 2005	NA	Any chapter	All items of machinery, including prime movers, instruments, apparatus and appliances, control gear and transmission equipment, and auxiliary equipment (including those required for testing and quality control) and components, required for initial setting up of a project for generation of power or generation of compressed bio-gas (Bio-CNG) using non-conventional materials, namely, agricultural, forestry, agro-industrial, industrial, municipal and urban waste, bio waste or poultry litter	Nil

6.3.1 Bio-mass GRID

The following breakup for levelised tariff for a Bio-mass GRID project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Land and site Development	2.42%	These are assumed as services – 50% procured within the State and 50% on inter-State basis	Service tax is applicable at 14.5%	• Inter-State – IGST would be applicable at 20% • Intra-State – CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Civil works (Share of cement)	3.58%	Procured within the State	Excise duty is applicable at 12.5% VAT is applicable typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT on cement in each State
Civil works (Share of steel structural)	2.69%	Procured within the State	Excise duty is applicable at 12.5% VAT is applicable typically at lower rate of each State	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Civil works (Share of other goods -	2.69%	Procured within the State	Excise duty is applicable at 12.5% VAT is assumed typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT in each State
Civil works (share of services)	5.97%	Procured within the State	Service tax is applicable at 14.5%	CGST and SGST applicable at 20%	Increase in tax rate would increase costs
Plant and machinery	68.01%	30% parts are imported, 35% are procured within the State and 35% are procured on inter-State basis	• Import - Customs duty is applicable at 9.36% (BCD of 5% , cess of 3% and SAD of 4%) –ACD is exempt • Intra-State	• Import - BCD exemption could continue. However, there would be additional IGST of 20%	Removal of exemptions and statutory forms and increase in tax rate would increase costs

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
			procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above) • Inter-State procurements – Excise duty is exempt. CST is applicable at 2% against Form C	• Intra-State procurements – CGST and SGST would be applicable at 20% • Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	
Miscellaneous fixed assets	2.80%	Procured within the State	Excise duty is applicable at 12.5% VAT is assumed typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT in each State
Contingencies	11.84%	These are assumed as services – 50% procured within the State and 50% on inter-State basis	Service tax is applicable at 14.5%	• Inter-State – IGST would be applicable at 20% • Intra-State – CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Operation and maintenance					
O&M	100%	Assumed as works contract - within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State
Biomass charges					
Biomass (bagasse)	100%	Procured within the State	VAT applicable - depending kind of input used. Assumed	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
			(typically) at lower rate in each State		

The State wise impact on the total COG as well as levelised tariff is summarized below[7]:

Bio Mass Projects – Impact on Total COG				
State	**Total COG in current regime (Rs. Per unit)**	**Total COG in GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	9.19	10.38	12.99%	
Maharashtra	10.39	11.74	12.96%	
Andhra Pradesh	9.29	10.41	12.00%	
Karnataka	9.76	10.89	11.62%	
Punjab	10.56	11.77	11.44%	
Uttar Pradesh	9.41	10.61	12.74%	
Haryana	10.22	11.51	12.64%	
Chhattisgarh	9.76	11.01	12.83%	

Bio Mass Projects – Impact on Applicable tariff (FY15-16)				
State	**Current regime (Rs. Per unit)**	**GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	7.45	8.40	12.68%	
Maharashtra	8.34	9.39	12.63%	
Andhra Pradesh	7.53	8.40	11.47%	
Karnataka	7.88	8.75	11.11%	
Punjab	8.47	9.40	11.02%	
Uttar Pradesh	7.62	8.56	12.38%	
Haryana	8.21	9.22	12.30%	
Chhattisgarh	7.88	8.86	12.48%	

[7] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

6.3.2 Bio-mass gasifier

The following breakup for levelised tariff for a bio-mass gasifier project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Erection, Commissioning and training	10%	These are assumed as services – 50% procured within the State and 50% on inter-State basis	Service tax is applicable at 14.5%	• Inter-State – IGST would be applicable at 20% • Intra-State – CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Plant and machinery	90%	30% are imported, 35% are procured within the State and 35% are procured on inter-State basis	• Import - Customs duty is applicable at 9.36% (BCD of 5% , cess of 3% and SAD of 4%) –ACD is exempt • Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above) • Inter-State procurements – Excise duty is exempt. CST is applicable at 2% against Form C	• Import - BCD exemption could continue. However, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20% • Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	Removal of exemptions and statutory forms and increase in tax rate would increase costs
Operation and maintenance					
O&M	100%	Assumed as works contract - within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax –	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
			Applicable at 14.5% on 70% of the value		
Biomass charges					
Biomass (bagasse)	100%	Procured within the State	VAT is assumed typically at lower rate in each State	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs

The State wise impact on the total COG and levelised tariff is summarized below[8]:

Biomass Gasifier Projects- Impact of GST on Total COG (Rs/Unit)				
State	**Current Regime**	**GST Regime**	**Change (%)**	**Impact**
Tamil Nadu	8.23	9.33	13%	▼
Maharashtra	9.34	10.59	13%	▼
Andhra Pradesh	8.33	9.36	12%	▼
Karnataka	8.76	9.80	12%	▼
Punjab	9.50	10.62	12%	▼
Uttar Pradesh	8.43	9.55	13%	▼
Haryana	9.18	10.37	13%	▼
Chhattisgarh	8.76	9.92	13%	▼

Bio Mass Gasifier Projects – Impact on Applicable Tariff (FY15-16)				
State	**Current regime (Rs. Per unit)**	**GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	6.59	7.46	13.26%	▼
Maharashtra	7.40	8.37	13.18%	▼
Andhra Pradesh	6.66	7.46	11.92%	▼
Karnataka	6.98	7.78	11.52%	▼
Punjab	7.52	8.37	11.40%	▼
Uttar Pradesh	6.74	7.61	12.91%	▼
Haryana	7.28	8.21	12.78%	▼

[8] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

Chhattisgarh	6.98	7.88	12.99%	

6.4 Small hydro project - Impact

Provided below is summary of exemptions which are provided currently to the small hydro power plants sector (in addition to the general exemptions mentioned above which are available for various renewable energy sectors which have been discussed earlier).

(i) VAT/ CST

State	Reference	Description	Concessional rate
Maharashtra	Schedule C (Entry 53 & 97)	Transformers and components and parts thereof and Industrial cables (High voltage cables, plastic coated cables, jelly filled cables, optical fibre cable	5%
Himachal Pradesh	Schedule A Part IA (Entry 2)	Plant and machinery when sold to hydro-power units for use in generation of hydro-power subject to furnishing of a certificate in duplicate by the registered hydro-power unit to the registered selling dealer in the following Form 'HD	2%

6.4.1 Small Hydro GRID projects

The following break-up for levelised tariff for a Small Hydro GRID project has been considered:

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Capital cost					
Civil works (Share of cement)	11.76%	Procured within the State	Excise duty is applicable at 12.5% VAT is applicable typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT on cement in each State
Civil works (Share of steel structural)	8.82%	Procured within the State	Excise duty is applicable at 12.5% VAT is applicable typically at lower rate of each State	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Civil works (Share of other goods -	8.82%	Procured within the State	Excise duty is applicable at 12.5% VAT is assumed typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT in each State

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
Civil works (share of services)	19.60 %	Procured within the State	Service tax is applicable at 14.5%	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Electrical (turbine and generator)	29%	27% parts are imported, 36.5% are procured within the State and 36.5% are procured on inter-State basis	• Import - Customs duty is applicable at 23.42% (BCD of 5%, ACD of 12.5%, cess of 3% and SAD of 4%) • Intra-State procurements – Excise duty is applicable at 5%. VAT is applicable at concessional rate provided by State (as highlighted above) • Inter-State procurements – Excise duty is applicable at 12.5%. CST is applicable at 2% against Form C	• Import - BCD concession could continue. However, there would be additional IGST of 20% • Intra-State procurements – CGST and SGST would be applicable at 20% • Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	Removal of exemptions and statutory forms and increase in tax rate would increase costs
T&D (cables and transformers)	4.8%	50% procured within the State and 50% procured on inter-State basis	• Intra-State procurements – Excise duty is applicable at 5%. VAT is applicable at concessional rate provided by State (as highlighted above) • Inter-State procurements – Excise duty is applicable at 12.5%. CST is applicable at 2% against	• Intra-State procurements – CGST and SGST would be applicable at 20% • Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	Removal of exemptions and statutory forms and increase in tax rate would increase costs

Cost category	%	Procurement pattern assumed	Current regime	GST	Comments
			Form C		
Land, administrative, miscellaneous charges,	17.2%	Assumed as services - 50% procured within the State and 50% procured on inter-State basis	Service tax applicable at 14.5%	• Inter-State – IGST applicable 20% • Intra-State - CGST and SGST would be applicable total 20%	Increase in tax rate would lead to an increase in costs
Operation and maintenance					
O&M	100%	Assumed as works contract - within the State	• VAT - Applicable as per valuation and rate provided by State • Service tax – Applicable at 14.5% on 70% of the value	CGST and SGST would be applicable at 20%	Impact for each State to be analyzed based on current rate applicable for each State

The State wise impact on the levelised tariff is summarized below[9]:

Small Hydro Projects				
State	**Levelised Tariff in current regime (Rs. Per unit)**	**Levelised Tariff in GST regime (Rs. Per unit)**	**% increase**	**Impact**
Tamil Nadu	5.47	6.07	11.11%	▼
Maharashtra	5.47	6.07	11.04%	▼
Andhra Pradesh	5.47	5.94	8.64%	▼
Arunachal Pradesh	4.64	4.68	0.80%	▼
Karnataka	5.47	5.92	8.35%	▼
Sikkim	4.64	4.79	3.16%	▼
Himachal Pradesh	4.64	4.75	2.44%	▼
Uttarakhand	4.64	4.86	4.63%	▼

[9] Please refer workings for detailed comments – These have been provided based on workings provided in CERC orders, assumptions and exemptions available currently

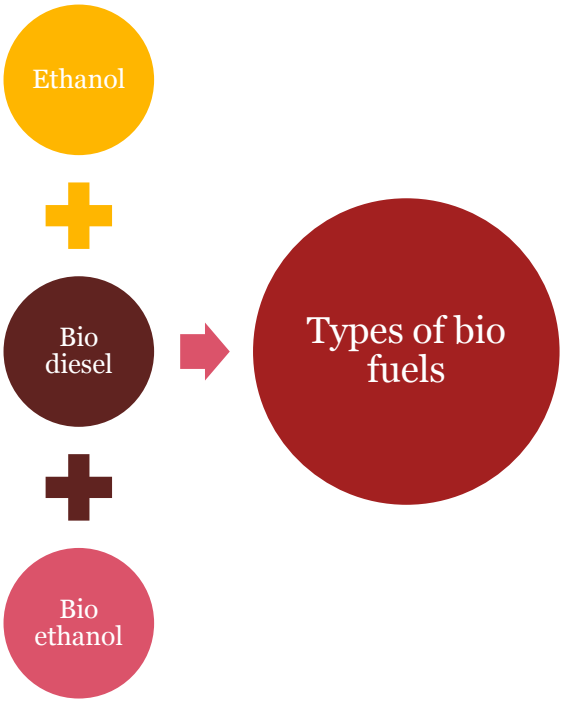
6.5 Bio-fuel sector - Impact

Bio-fuel is an upcoming source of renewable energy in India. Biofuels are produced through contemporary biological processes, such as agriculture and anaerobic digestion, rather than a fuel produced by geological processes (such as coal or petroleum).

Unlike other sources of renewable energy where the end product if electricity, bio-fuel sector is engaged in production of bio-fuel itself. Such bio-fuel is supplied to OMCs, Government and State bodies including railways as well as in bulk to various industrial players.

The different types of bio fuels are ethanol, bio diesel and bio ethanol.

The implications on the same have been discussed below.



6.5.1 Ethanol

The primary input for ethanol is molasses (which is obtained as residue of the sugar industry). The ethanol produced from such molasses is supplied typically to the OMCs for blending in petrol.

The following exemptions have been provided under central excise to molasses as well as ethanol:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
12/2012-Excise dated 17 March 2012	17	1703	Molasses (Other than produced in the manufacture of sugar by the vacuum pan process), for use in the manufacture of goods other than alcohol	Nil
	40	2207 20 00	All spirits (other than denatured ethyl alcohol of any strength)1	Nil
	40A		Ethanol produced from molasses generated from cane crushed in the sugar season 2015-16 ie. 1 October 2015 onwards, for supply to the public sector oil marketing companies, namely IOCL, HPCL, BPCL for the purposes of blending with petrol	Nil

Hence, no excise duty is levied on molasses supplied to the ethanol producers as well as ethanol produced for supply to OMCs.

Provided below is comparison between current rates on molasses and ethanol and proposed rate under GST:

Molasses – Impact on rate				
State	**Current regime**		**GST rate**	**Impact**
	Excise duty	**VAT**		
Karnataka	Nil	20%	20%	
Maharashtra	Nil	20%	20%	
Punjab	Nil	14.30%	20%	
Tamil Nadu	Nil	30%	20%	
Uttar Pradesh	Nil	14.5%	20%	

Ethanol – Impact on rate				
State	**Current regime**		**GST rate**	**Impact**
	Excise duty	**VAT**		
Karnataka	Nil	20%	20%	
Maharashtra	Nil	20%	20%	
Punjab	Nil	14.30%	20%	
Tamil Nadu	Nil	14.5%	20%	
Uttar Pradesh	Nil	14.5%	20%	

6.5.2 Bio-diesel

The primary input for bio-diesel are palm fatty acids, palm stearin , edible oil seeds etc (the main input is palm stearin.) The bio-diesel produced is supplied typically to the OMCs for blending in high speed diesel. Bio-diesel may also be separately supplied to other customers (such as railways or industrial units when sold in bulk).

The following exemptions have been provided under central excise to molasses as well as ethanol:

Notification	Entry	Chapter heading	Description of goods	Concessional rate
Excise Tariff		Chapter 29 or 38	Alkyl esters of long chain fatty acids obtained from vegetable oils, commonly known as bio-diesels	Nil
12/2012-Excise dated 17 March 2012	113A	3823 11 12	The following goods for use in the manufacture of alkyl esters of long chain fatty acids obtained from vegetable oils, commonly known as bio-diesels, namely:- (i) RBD Palm Stearin (ii) Methanol (iii) Sodium Methoxide *This exemption was granted from 19 October 2015 onwards*	Nil (upto 31 March 2016)

Notification	Entry	Chapter heading	Description of goods	Concessional rate
	76	2710	High speed diesel oil blended with alkyl esters of long chain fatty acids obtained from vegetable oils, commonly known as bio-diesels, up to 20% by volume, that is, a blend, consisting 80% or more of high speed diesel oil, on which the appropriate duties of excise have been paid and, up to 20% bio-diesel on which the appropriate duties of excise have been paid.	Nil

Hence, no excise duty is levied on palm stearin supplied to the bio-diesel producers as well as bio-diesel produced. Further, no excise duty is also levied on high speed diesel which has 20% blend by volume of bio-diesel.

Provided below is comparison between current rates on molasses and ethanol and proposed rate under GST:

Palm Stearin – Impact on rate				
State	Current regime		GST rate	Impact
	Excise duty	VAT		
Karnataka	Nil	5.5%	20%	▼
Maharashtra	Nil	5%	20%	▼
Punjab	Nil	6.05%	20%	▼
Tamil Nadu	Nil	5%	20%	▼
Uttar Pradesh	Nil	5%	20%	▼

Bio-diesel – Impact on rate				
State	Current regime		GST rate	Impact
	Excise duty	VAT		
Karnataka	Nil	5.5%	20%	▼
Maharashtra	Nil	12.5%	20%	▼
Punjab	Nil	14.74%	20%	▼
Tamil Nadu	Nil	14.5%	20%	▼
Uttar Pradesh	Nil	Nil	20%	▼

6.5.3 Bio-ethanol

The primary input for bio-ethanol is bio-mass. This is a comparatively new field and currently there are no bio-ethanol plants in India.

6.5.4 Impact of GST on bio-fuel sector

For all the aforementioned bio-fuel sources, the key impact of GST would be as under:

- Increase in cost of procurements for biofuel– The cost of procurements of inputs used in production of bio-fuel would increase due to the following reasons:

  - Since GST aims at pruning of exemptions to continue the credit chain, the exemptions produced to various inputs of the bio-fuel sector (such as excise exemptions to molasses, palm stearin etc) may be done away with. In such case, there may be an increase in the rate of tax paid on inputs which would have a cash flow impact. However, such taxes paid on input should be available as credit to the bio-fuel producer
  - Removal of statutory forms – Procurement against Form C (at 2%) may be removed. Since Form C would be removed as well as exemptions removed, the cost of procurements may go up leading to higher working capital requirements
  - Increase in rate – Possible increase in rate under GST as compared to the current VAT rate leading to higher cost of procurements

- Increase in taxes on bio-fuel – Currently, excise exemption provided to ethanol as well as bio-diesel. Such exemptions may be pruned leading to higher cost and increase in prices of ethanol/ bio-diesel. Further, there may also be an increase in the rate of tax on bio-fuels under GST as compared to current VAT rates leading to higher tax burden

- No credit available for OMCs – OMCs which produce petrol/ diesel etc would be outside GST unless otherwise notified. Hence, the GST charged on ethanol/ bio-diesel would not be available as credit to OMCs and would become a cost. Further, the cost would increase substantially due to removal of exemptions and statutory forms as well as increase in rate of tax. Hence, any GST charged by the bio-fuel producers would become a cost to the OMCs – OMCs may seek to reduce the consumption of such bio-fuels which would go against the objective of the Government to produce this sector

5. Key issues and recommendations

Per the aforesaid analysis, it is evident that the cost of renewable energy would increase under the GST regime. Analyzed below are the key factors under GST which lead to a potential negative impact for the renewable energy sector and recommendations for the same.

7.1.1 Key factors for negative impact under GST

(i) Increase in tax costs due to removal of exemptions

Current regime

Electricity generated by renewable energy sources is generally exempt from electricity duty in most of the States[10].

However, various taxes are levied on procurement of goods and services (on both capital procurements as well as O&M charges). The taxes paid against such procurements become a cost as there is no output liability (and in any case such taxes cannot be utilized against electricity duty).

The Government has always strived to promote the renewable energy sector and accordingly, various exemptions have been provided to the sector. A few of these include:

- Customs duty exemptions/ concessions on import of goods required to be used in specified renewable energy sector. Few examples include:
  - Concessional rate of BCD of 5% is provided to import of all goods used for Project Imports
  - Solar - Exemption from BCD on solar panels, cells and modules. Also, exemption from ACD and SAD provided to all items of machinery, transmission equipment, auxiliary equipment etc used for setting up of solar power plant. Further, import of various other solar components has been exempt or provided concessional rate
  - Wind – Concessional rate of BCD of 5% and exemption from ACD and SAD provided to import of various components used by a wind power plant (such as wind operated electricity generators, wind turbine controllers etc)
  - Small Hydro – No specific exemption for small hydro projects
  - Bio Mass – Concessional rate of BCD of 5% and exemption from ACD provided to all items of machinery, auxiliary equipment etc for setting up a project for generation of power or generation of compressed bio-gas
- Excise duty exemptions/ concessional rates on production of renewable energy as well as procurement of goods to be used in production of renewable energy. Few examples include:
  - Solar – Excise duty exemption provided to all items of machinery, transmission equipment, auxiliary equipment etc used for setting up of solar power plant
  - Wind – Excise duty exemption provided to specified goods/ parts used for manufacture on products which may be used in a wind operated power plant
  - Small Hydro- No specific exemption for small hydro projects

[10] Few States such as Maharashtra have recently imposed electricity duty on electricity generated through renewable energy

- Bio Mass- Exemption from excise duty provided to all items of machinery, auxiliary equipment etc for setting up a project for generation of power or generation of compressed bio-gas using non-conventional materials, namely, agricultural, forestry, agro-industrial, industrial, municipal and urban waste, bio waste or poultry litter

- Bio-fuel – Excise exemptions provided to bio-fuels (ethanol as well as bio-diesel) as well as its key inputs (such as molasses and palm stearin)

- Exemption/ concessional rate have been provided under various State VAT legislations on sale of goods to be used for generation of renewable energy. For example:

  - Tamil Nadu – Concessional rate of VAT of 5% available to renewable energy devices and spare parts other than few specified goods
  - Gujarat - Concessional rate of VAT of 5% available to renewable energy devices and components and parts thereof
  - Rajasthan – Exemption provided to solar energy equipment and plant and Machinery including parts thereof, used in generation of Electricity, from- (a) Solar Energy;(b) Wind Power
  - Further, lower rate of VAT has also been provided on various inputs for bio-fuel sector in few States

- Various other exemptions/ concessions under both State as well as Central Indirect Tax legislations – exemptions under Entry tax law, incentives under State industrial policy etc

The above tax exemptions/ concessions help in reducing the procurement cost incurred for setting up/ operating a renewable energy project.

GST regime

GST is based on the foundation of providing a one tax regime, seamless credit chain (through cross utilization of credits *inter se* goods and services) and reduction of exemptions. However, electricity is expected to continue to be an exempted product under GST regime. Considering the same, for renewable energy projects, the GST paid on inputs, capital goods and services would continue to be a cost. Therefore, if exemptions/ concessional rates are pruned under the GST regime, there would be a substantial increase in the cost of procurements.

Since electricity duty would be outside GST, the GST paid on such procurements would continue to be a cost and would have an adverse impact on the cost of renewable energy. Similarly, taxes charged on bio-fuel would become a cost to OMCs (as they would be outside GST).

Further, it is imperative to note that the adverse impact of tax cost would vary from project to project (as well as from one source of renewable energy to another) based on the procurement pattern (import vs. domestic purchase) as well as extent of exemptions available currently (For eg – Solar has more exemptions currently than Small Hydro plants. Hence, impact on Solar would be more adverse that on Small Hydro plants).

For the purpose of computation, it has been assumed that all exemptions available currently would be removed and the BCD rate would continue to remain as in current regime (whether concessional or otherwise).

(ii) Increase in tax rates

Current regime

Currently, different tax rates are applicable depending on the nature of procurement. For example, generic Excise duty rate is 12.5%, Service tax is 14.5% and VAT is 5%-14%. All such rates could be reduced/ exempted basis the actual nature of goods and purpose.

GST regime

GST aims to provide a single rate for goods and services. The Select Committee has recommended that the standard GST rate should not exceed 20%. For the purpose of computation, it has been assumed a CGST rate of 10%, SGST rate of 10% and IGST rate of 20% (for inter-State transactions). Further, an additional tax 1% may be levied for 2 years on inter-State sales/ purchases.

A GST rate of 20% would also be substantially higher than the rates applicable currently on procurement of goods and services in the renewable energy sector. For example:

- Concessional rates (both excise duty as well as VAT) are available on procurement of goods within India. GST rate of 20% would be substantially higher than the taxes which are paid on domestic procurement of goods currently
- Service tax is paid at 14.5% currently while GST would be applicable at 20%. This clearly shows a significant increase in tax costs which would be paid on procurement of services such as installation, transportation etc
- Operation and Maintenance – Both VAT and service tax is applicable currently on operation and maintenance activities. However, concessional rate and valuation provisions are provided for under VAT as well as Service tax laws. Accordingly, the effective tax generally is lower than the proposed GST rate of 20%

Hence, an increase in tax rate[11] would have an adverse impact on the taxes which would be paid on procurements as the same would increase the tax cost burden for the renewable energy sector.

(iii) Removal of statutory forms

Current regime

Currently, inter-State procurements are liable to CST. A concessional rate of CST of 2% is provided against issuance of statutory form (Form C) in case the goods are to be used in generation or distribution of electricity.

Hence, the tax cost on account of CST is limited to 2% in case of inter-State procurements for renewable energy projects.

GST regime

It is expected that statutory forms would be done away with in the GST regime. Hence, concessional rate of tax would not be available even if the goods are to be used in generation of distribution of electricity.

In such case, IGST at 20% would be applicable on inter-State procurements along with an additional tax of 1%. This showcases a substantial increase in tax costs as compared to the current regime which would directly impact the cost of renewable energy.

[11] Please note that tax impact for vendor selling to a renewable energy developer would also need to be analyzed and his costs may increase/ decrease based on rate of tax under GST and credit fungibility

7.1.2 Key recommendations

The Government has always strived to boost the renewable energy sector. This is also evident from the current Government policies and initiatives.

Current tax concessions play an important role to make renewable energy competitive.

Under GST, increase in tax cost for renewable energy sector could not only have a possible negative impact on cost of setting-up renewable energy plants but also increase the working capital requirements for the renewable energy sector leading to higher financial as well as operating costs. Further, the renewable energy sector benefits every strata of the society (including various rural areas) and hence, any increase in tax costs would also have an adverse social impact.

In line with the endeavour of the Government to promote the renewable energy sector and to ensure that there is not a substantial increase in the delivered cost of renewable energy, the following recommendations may be taken into account:

For renewable energy sector

- Current tax exemptions provided to the renewable energy sector should be continued under the GST regime as well. In addition even the services rendered to a project owner for setting up and operation of renewable energy plant/ project should be exempt from levy of GST. This would ensure that there is no adverse impact on the procurements made for generation of renewable energy due to increase in tax costs

- Exemptions should be provided for all categories of goods supplied to a renewable energy project (whether meant used in setting up or are parts/ components of the plant or are used for O&M). If exemption is provided HSN classification wise, detailed HSN classification should be provided, to eliminate ambiguity.

- Sale of goods and services to renewable energy projects should be zero-rated, ie the vendors providing such goods and services at nil GST rate should be eligible to avail credit of the GST paid on inputs, capital goods and services used.

- Wherever, exemptions are not available, concessional rate of GST (both at Central and State level) should be applicable on goods and services used by renewable energy sector

- Currently, the VAT rate in respect of renewable energy sector vary from state to state. It is recommended that the SGST rate on such goods should be uniform across states under GST regime

- Currently, a lot of ancillary products (such as battery, transformers) meant for renewable energy projects are liable to taxes at normal rates. Under GST, it is recommended that all the goods used for setting up or operating a renewable energy project should be eligible for relevant exemptions.

- The project developer should be eligible to claim refund of GST paid (both at Central and State level) on goods and services used for setting up and operating renewable energy project.

For bio-fuel sector

- Exemptions provided to goods used in bio-fuel production as well as on bio-diesel itself should continue and be zero rated

- Wherever, exemption is not granted, a concessional rate of GST should be applicable on both goods and services used in bio-fuel sector as well as on bio-diesel itself

- OMC should be eligible to take refund of taxes paid on bio-fuel considering that petrol/ diesel would be outside GST

- Refund of unutilized credits should be available to bio-fuel manufacturers in case of inverted duty structure

6. Scope limitations

- This report only provides the impact on various renewable energy sectors.
- Comments are based upon the assumptions stated in the report, CERC orders, discussions with MNRE officials and industry players, existing drafts available in the public domain and various discussions.
- Only those renewable energy projects have been covered as mentioned above for which reliable information could be gathered.