

Carbon Accounting and Sustainable Designs in Product Lifecycle Management

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Lecture 43

Carbon Accounting Databases (Part-3)

Hello everyone. Welcome again to the course on Carbon Accounting and Sustainability Designs in Product Lifecycle Management. I am Dr. Prabal Pratap Singh and we are co-teaching this course with Prof. Deepu Philip and Dr. Amandeep Singh.

In the last section of the course, we were talking about different types of carbon accounting databases that are prevalent and are very useful in the global arena. And today we are going to learn about the different types of carbon accounting databases that are used in India by government agencies or the other private agencies.

In India, there are different kinds of ministries that are responsible for the actions on climate change. So they have either developed their own databases or they are supporting or sponsoring these databases.

Similarly, there are different major corporations like Mahindra, Tata, these kinds of organizations, they are also developing their own carbon accounting databases so that they can efficiently conduct their own processes. So let us dive deeper into these things.

Carbon Accounting Databases in India

- India has both private and governmental carbon accounting databases.
- GHG program and Bureau of Energy Efficiency (BEE) PAT scheme } National level
serve as foundational initiatives for tracking emissions
- Mahindra, Tata, Wipro sets their own benchmarks for carbon accounting process.
- These databases in India plays a crucial role for the national climate change actions

So India has both private and governmental carbon accounting databases. So, again the greenhouse gas protocol GHG program and another program that is known as Bureau of Energy Efficiency usually known as BEE. This organization's pet scheme. This is perform, achieve and transfer scheme. This scheme serves as the foundational initiatives for tracking emissions. Now this scheme is at national level, right.

So today we are talking only about India so another these are the governmental organizations that we are talking about now the different types of private organizations like Mahindra Tata They also set their own benchmark for carbon accounting process. So, these databases in India plays a crucial role for the national climate change actions

Carbon Accounting Database Users in India

- Governmental & Regulatory Bodies
 - Ministry of Environment, Forest and Climate Change.
 - Central Pollution Control Board → monitor the pollution
→ linked to carbon accounting
 - BEE → implement policies
→ track emissions → industry sectors
- Corporations or large industries
 - Automotive Sector
 - Tech companies
 - Heavy industries → steel, cement, power generation, etc.
- Banks or Financial institutions
- NGOs and research institutes
- Environmental Auditors

So let us talk about what are the different kinds of database users that are using this in India. So first of all, there are governmental and regulatory bodies, right.

The next kind of users are corporations large industries the third are banks or financial institutions, another is non-governmental organizations or NGOs and research institutes, right. Finally environmental auditors they also use these databases if they are available in a particular nation. So under government or regulatory bodies, there are different kinds of ministries like Ministry of Environment, Forest and Climate Change. So this is a ministry in India that is actively using these kinds of databases.

Another is Central Pollution Control Board (CPCB). So, they are using this to either monitor the pollution or any other activity that is linked to carbon accounting. The third we talked recently in the last slide is BEE (Bureau of Energy Efficiency). What they do is they implement policies or track emissions. Emissions from what?

Different kinds of industry sectors. So we will talk about this PAT scheme in the next slide so that we can understand what they are doing in this scheme. Similarly, private corporations or large industries are actively using these kinds of databases in automotive sectors. So an example we already talked is Mahindra. So they are using these and even creating these kinds of databases.

Tech companies are also using. Also all the heavy industries, heavy industries. So any of these heavy industries like steel, cement industry, or power generation set.

Carbon Accounting Databases in India

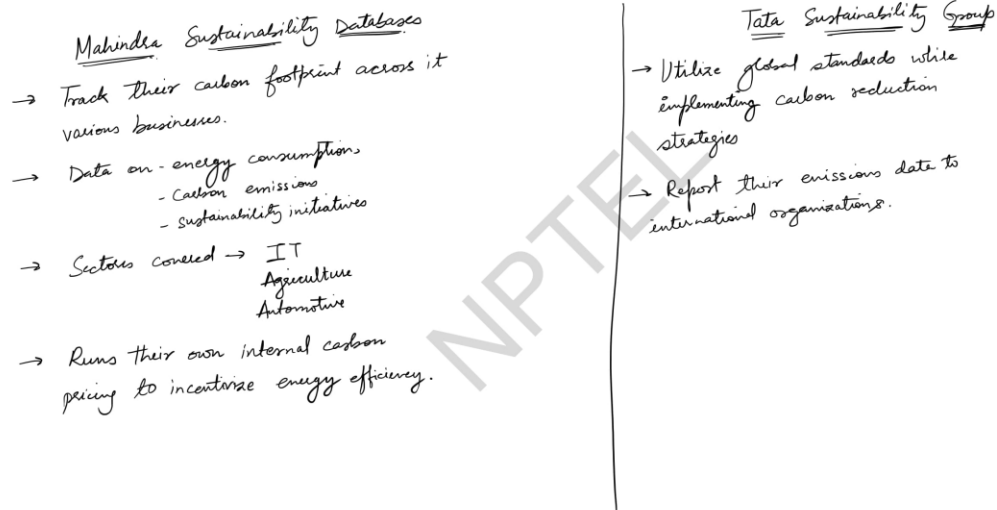
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- BEE -> PAT scheme
- Perform, Achieve and Trade Scheme.
 - sets the energy efficiency targets for energy-intensive industries
 - Part of National Mission for Enhanced Energy Efficiency.
 - Organizations use this scheme for
 - Carbon accounting
 - Trade energy saving certificates
 - Monetize energy efficiency gains
- National Inventory Management Systems
- Developed by Indian Ministry of Environment Forest and Climate Change.
 - Creates National inventory of GHG emissions.
 - Agriculture, waste, etc.
 - Develop policies on climate change mitigation

So, let us talk about these databases in detail one by one. So, the first is BEE (Bureau of Energy Efficiencies) PAT scheme.

So this is perform achieve and trade scheme, so this scheme sets the energy efficiency. For all the energy intensive industries right so this scheme is under the part of national mission, for enhanced energy efficiency. So they use this scheme for organizations use this scheme for carbon accounting, trade energy, saving certificates, auto monetize, efficiency gains, energy efficiency against similarly.

If we are since we are looking about the government accounting effort, so there is another thing that is National Inventory Management Systems (NIMS), so this is also developed by Indian Ministry of Environment Forest and Climate Change. This creates national inventory of Greenhouse Gas (GHG) emissions, now this is useful for industries like agriculture, waste industry, etc. And they are using it to develop policies on climate change mitigation.

Carbon Accounting Databases in India



Now let us talk about the private organizations. So the first is Mahindra Sustainability Databases. So they track their carbon footprint across various businesses. So what data they are tracking?

They provide data on energy consumption, carbon emissions and sustainability initiatives inside their own organization. So they are also active in different sectors like they are active in sectors covered by this organization are information technology that is it or agriculture and automotive industry. They also runs their own internal carbon pricing to incentivize energy efficiency. Similarly, Tata is also actively creating their own carbon accounting databases. So, it is named as Tata Sustainability Group.

Now they also track across various data group companies and they utilize global standards global standards of what carbon accounting process. While implementing carbon reduction strategies. Further they also report their emissions data to international organizations.

Carbon Accounting Databases in India

- Wipro Sustainability Reports
- Detailed annual sustainability reports.
 - ↳ GHG emissions
 - Energy usages
 - other environmental metrics.
 - Focus on renewable energy use.

- Equilibrium Energy
- Energy data management company
 - Provides tools and database to track energy consumption and emissions in Indian industries.
 - Provide real-time data on energy usage.
 - Help and improve to track and manage energy efficiency in a better way.

Another private organization is Wipro sustainability reports. So this is a leading Indian IT firms that provides detailed annual sustainability reports.

Now what is detailed in these reports they include GHG emissions the energy usages across various data centers and other environmental metrics. So all these private organizations, they are also trying to catch up with the global organizations that are reporting these kinds of climate change activities, mitigation efforts, right. So they are using these standards that are prevalent and trying to report each and every emissions that they are doing so that our national climate mitigation efforts are active. And the focus is on renewable energy use.

So next is equilibrium energy. So this is an energy data management company. And what they are doing they are providing provides tools and database to track energy consumption and emissions in Indian industries. One major distinguishing feature of this effort is they provide real time data on energy usage in India.

Further they also help and improve to track and manage energy efficiencies in a better way for other organizations. With this, we now have already talked about what are the different kinds of carbon accounting databases that are being used and not only in India, also in other countries as well. Further, we also talked about the role of these carbon

accounting databases and how these companies are implementing them. Also, the usefulness of the real time monitoring of these energy usages.

So, now in the next lecture, we will start with the actual database management system so that we can learn how to create our own databases and then perform these operations in our own organizations.