

Feedback from Prayas (Energy Group) on proposed changes to the Central Electricity Authority (CEA) website

CEA is revamping its website to improve data dissemination, particularly with respect to monthly and yearly data. As part of this upgrade, a dashboard is being developed, with visualisation of some of CEA's data. In addition, APIs are being provided to a subset of the data. In this context, CEA [sought feedback](#) on the new website from data users and the general public through a [Twitter message](#). Prayas (Energy Group) expressed interest in reviewing the site under development. In response, CEA shared login credentials to the site. The following comments are based on a review of the development site. The comments are largely focussed on the monthly and yearly data dissemination as well as the dashboard and APIs under development.

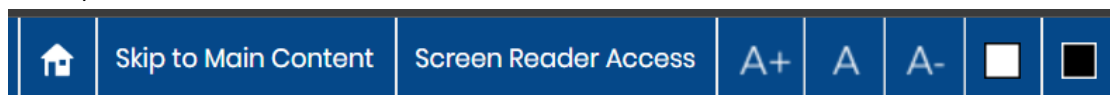
In the same twitter thread, it was informed that a renewable energy data portal is under development in collaboration with CEEW. It is hoped that detailed renewable energy data is disseminated to the public along with any aggregate analysis undertaken as part of this effort. In addition, we hope that feedback is sought from the public before this renewable energy data portal is launched. In addition, either this RE data portal should be integrated within the CEA website, or there should be an organic link between the CEA website and the RE data portal. This applies to the plethora of other portals that have come up, especially those that contain useful and important electricity sector data, such as Saubhagya, UJALA, UDAY, Vidyut Pravah and PRAAPTI. The NPP provides links to these portals, but a better approach would be to integrate the data within the CEA dashboard in a systematic manner.

Following are detailed comments on the development version of the new website:

Overall comments:

1. The new landing page is very busy/cluttered, with multiple blocks and moving parts - the charts, the photos, the links to recent documents/circulars, etc. This clutter results in difficulty in finding anything easily. The ticker tape containing the "What's new" links moves too fast. An important guideline to consider for accessibility/usability of the website is to allow the user to spot and access everything on the site at one glance, and with minimum number of clicks. Hence, a simpler, less cluttered design would be better. In comparison, the landing page on the current live website is cleaner and more accessible. Perhaps CEA could hire a good usability/design consultant who can provide inputs to address these issues.
2. When the English version of the website is chosen, the website switches back to Hindi from time to time and the user needs to switch back to English. Sometimes even though the page URL says "lang=en", the column headings and some text is in Hindi. List of states in drop-down are sorted by Devanagari alphabet even if the language of the page is English. All these need to be fixed so that all content is shown in the chosen language at least for the duration of the session, and preferably across multiple sessions (by saving the preference in a browser cookie).
3. It would be better to have separate pages for "What's new", "Circulars" and "Reports" so that all items under each heading can be accessed in one place. The ticker on the home page should be for at most 3 recent items with a link to the relevant page with a more comprehensive list of items.
4. CEA should put out minutes of meetings and clearance documents under a separate section. Currently, these are not available consistently on the website.

- CEA should take this opportunity to make the website more accessible to users with different needs, similar to several government websites. See <http://moef.gov.in/> and <https://www.powermin.nic.in>, for a couple of examples (MoEFCC website screenshot pasted below).



- When we click on any of the accordion links (in the Wings page), the page automatically scrolls to the top of the page. The user will then have to repeatedly keep scrolling down. The accordion should expand and collapse in place, retaining the page position.
- The new site needs extensive testing – preferably by a third party than the developer – before it can go live.

Comments on reports:

- The National Power Portal (NPP) should be merged with the CEA dashboard. Otherwise, it is confusing for users to find different subsets of data in different locations.
- Access to CEA reports is much easier in the new website since individual reports can be accessed directly from the main page, significantly reducing the number of clicks the user has to make as compared to the current live website. This should be retained going forward.
- Similarly, it would be good to provide access to archives of a particular report directly from within the page for the report itself, rather than provide a separate page for accessing archived reports. For example, the monthly capacity report archives can be made available on <https://demo.kreatetechnologies.com/cea/installed-capacity-report/?lang=en> itself, with an easy month and year selection (using a couple of drop down menus). There is no need for a separate archives page. Putting all old reports under one big archive will make it very difficult to access older reports / data.
- For monthly generation (and other reports), it is better to have tentative reports only until the actual reports are published. The tentative report can be overwritten with the actual report when available. In addition, it should be mentioned inside the tentative report that the data is tentative.
- The archives are not populated at the moment, but when they are added, they should have the same directory structure as the most recent report, so that they can be accessed programmatically. This is true in the current CEA site, but does not seem to be true with the new website. For example, the monthly installed capacity report is at http://www.cea.nic.in/reports/monthly/installedcapacity/2020/installed_capacity-04.pdf. By changing the year ('2020') and month ('04'), one can access the report for a different month (even within archives). For example, Nov 2019 report is at http://www.cea.nic.in/reports/monthly/installedcapacity/2019/installed_capacity-11.pdf. On the other hand, on the proposed site, the most recent monthly installed capacity report (for Jan 2020) is at https://demo.kreatetechnologies.com/cea/wp-content/uploads/2020/03/installed_capacity-01.pdf. The Feb 2020 report should hopefully be available at https://demo.kreatetechnologies.com/cea/wp-content/uploads/2020/03/installed_capacity-02.pdf. However, it is not clear what the '03' stands for after '2020'. It appears to be the month of upload. If this is true, it can cause problems because the path cannot be determined programmatically.

13. Currently, the reports, dashboard and APIs are on distinct pages. They would be much more accessible if all of them are integrated so that related reports, data, charts and APIs are all in one place. At the minimum, the relevant link to each API should be provided from within the Dashboard and the report based on the chart/report being accessed. Currently the APIs are listed separately at: <https://demo.kreatetechnologies.com/cea/api-for-central-electricity-authority-data/?lang=en>.
14. As discussed with CEA in several meetings, significant value would be added if data that are only available in printed form (such as 'General Review') are made available in electronic form, and all data in electronic form is also available in machine readable formats such as Microsoft Excel/CSV. A good example of such a dissemination is [RBI's annual publication titled "State Finances: A Study of Budgets"](#). While the new website has columns for excel/csv formats, they are not enabled and the reports can be downloaded only in PDF format.
15. On the page for a particular report, there appears to be no difference between Download and View options next to the report. Will they eventually be different? If so, how? 'View' usually implies a visual representation embedded in the page (html). Ideally, 'View' should display a corresponding chart from the Dashboard.
16. Currently, there are several reports available from the various pages related to "Wings". This categorisation is not immediately clear to the average user since the Wings reflect CEA's organisational structure. Will be good to have a separate better-organised section for these reports which are more technical and aperiodic – but also important.

Comments on the Dashboard:

17. The dashboard charts load quite fast, the filters are relevant and the ability to download data/charts in different formats is also useful. However, the colours could be better and more consistent. For example, Central-State-Private or different fuels/sources should have the same colour code in all graphs. In addition, different chart types should be explored. Currently only bar and pie charts are employed. The full potential of visualisation is realised only when appropriate chart types are employed to highlight interesting aspects of the underlying data. Please refer to <http://niti.gov.in/edm/#electricity> for an example of the same. Making such charts involves a significant and continuous effort to ensure that the charts are relevant and interesting. If such ongoing effort is not budgeted by CEA, it is better to not show charts, but instead concentrate efforts on consistently making underlying report data available in machine friendly formats and through appropriately structured APIs. Users can then develop/use their own tools to visualise the data in interesting ways.
18. In the Dashboards, when we click on a certain menu item under "Navigation Menu" there is a default chart that shows up with data for a certain time period. However, the filters provided are not prefilled with that default selection. It would be better to prefill the filters with the default selection.
19. The download workbooks seem to have some format issues. MS Excel says that it's not an Excel file even though the data is fine when it is opened anyways. In addition, some of the downloaded workbooks have merged cells, e.g., when we download RE generation data across multiple states and months. Merged cells should be avoided since they are not easily processed by machines. In the example just provided, the month can be provided in a separate column instead of being in the same column as the state.

Comments on APIs:

20. APIs should be provided to access all data from all periodic CEA reports in Excel/CSV or XML/JSON formats along the lines of https://data.gov.in/ogpl_apis. Currently, it appears that the APIs only provide access to a subset of the data, for the last one year or so. For example, APIs are provided for fuel/resource-wise installed capacity aggregate at national, regional and state level. However, sector-wise detail is not provided, whereas this is available through the charts and reports. It would also be useful if the APIs were parametrised so that only the relevant data can be extracted. For example, if one wanted to get only coal-based installed capacity as of 2015, it should be possible to pass “COAL” as a resource and “2015” as a year to the API, and fetch only the relevant data. Please refer to <https://www.eia.gov/opendata/qb.php?category=0> for an example.

Srihari Dukkipati, Ashok Sreenivas, Ann Josey
Prayas (Energy Group), Pune

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