

Comments of the Centre for Science and Environment on Interim Report of Expert Group on Low Carbon Strategies for Inclusive Growth by the Planning Commission of India

May 16, 2011

A. Overall comments

1. There is a clear lack of ambition in the strategies proposed. In case of renewable energy, for instance, the goal proposed even for the 'aggressive effort scenario' is far lower than what has been proposed in the National Action Plan for Climate Change.
 2. The report doesn't provide any overarching framework for low carbon 'inclusive' growth. On the contrary, the report is based on the assumption that the electricity intensity of the Indian economy might actually increase or at best will remain constant.
 3. In many sectors, the data used by the expert group is rather weak, outdated and not referenced. The use of old data has meant erroneous emissions calculations. In many sectors this has meant that the 2020 performance projected by the group has already been achieved or will be achieved soon. In other sectors, the 2020 performance is overly ambitious and will be difficult to achieve.
 4. Some of the observations made by the expert group is debatable, to say the least. One of them being that biomass burning by the poor to meet their energy need is more GHG emission intensive than natural gas/ LPG.
 5. The sum total of strategies proposed by the expert group in various sectors is not very different than what has been proposed or being implemented by different ministries/departments. It seems that the Expert group is quite comfortable with the 'business-as-usual' to continue, as its 'determined effort scenario' is no different than what has been proposed or being implemented by different ministries/departments.
 6. The final conclusion of the report is that the real GDP of India can grow at 8-9% and even in the 'determined effort scenario' (more or less similar to the plans and programmes being currently implemented by various ministries/ departments) the country can achieve 23-25% reduction in emissions intensity over 2005 levels.
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B. Sector-wise comments

1. Power sector

- The recommendation on the electricity sector largely assumes that the people of India are going to adopt a more and more energy intensive lifestyle and therefore the elasticity of electricity generated with GDP will remain constant till 2020 or even increase. This is a highly debatable assumption and contrary to the one made by planning commission's own Integrated Energy Policy (IEP) report.
- We believe that by making this assumption, the expert group has overestimated the electricity requirement till 2020. We also believe that providing access to electricity to all by 2020 – the stated goal of the IEP – need not increase the electricity intensity of GDP. On the contrary, providing electricity to poor is likely to increase their productive capacity manifolds and hence reduce electricity intensity of GDP.

- The goal should be to push for policies that will reduce as well as make electricity consumption by the rich more efficient. Unfortunately, though the report has proposed many action points on increasing the efficiency of consumption, it has made none to control electricity consumption by rich households and commercial establishments.
- The total Demand Side Management savings of electricity is calculated at 125 Billion units in the Determined effort and 255 Billion Units in the Aggressive effort until 2020. This is 6% and 12% respectively of the net electricity generation without DSM. The focus of the report is only on households and commercial appliances and lightings and therefore, the savings have only been calculated for them. This is a limited analysis as the report has completely ignored municipal demand side management (street lighting, water pumping, water and waste-water treatment etc.).
- The report has completely ignored Technical and Commercial losses on one hand and auxiliary consumption on the other. The average AT&C losses in India is still around 29-30%. There is a massive potential to reduce this in an innovative and accelerated manner. Similarly, there is potential to reduce auxiliary power consumption in coal-based power plant by 1-2%. This too has been ignored by the expert group.
- On the electricity generation front, the report only proposes what has been formally announced by the CEA. That is, 60% of the new coal-based power plants under the 12th plan to be super critical and 100% of the new plants under the 13th five year plan to be super critical. What the expert group has completely missed is the plan of CEA to decommission/ upgrade close to 10,000 MW of inefficient plants. In fact, the expert group in its report has suggested no strategy on how to improve the efficiency of the existing stock.
- According to the report, renewable energy will not really play any significant role till 2020. We find that even in the Aggressive scenario, all renewables (wind+ biomass+solar PV+solar thermal+SHP) contribute **a maximum of 6.5% to the total electricity generation in the country in 2020**. This is far lower than what National Action Plan on Climate Change (NAPCC) has envisaged. According to the NAPCC a dynamic minimum renewable purchase standard of 5% of total grid purchase has to be set in 2009-210 with 1% increase for 10 years. This would amount to 15% of generation in 2020 from RE. So, on one hand, the entire Renewable Purchase Obligations (RPOs) and Renewable Energy Certificate (REC) is being built on the ambitions set by the NAPCC, the report of the expert group is negating that by proposing much lower ambition.
- For wind, the expert group assumes both in the determined and aggressive scenario a 30 GW target. The present installed capacity is around 15 GW this means that the expert group is proposing an average installation of 1500 MW annually of wind power till 2020. The target set by MNRE is more than 2000 MW per annum for 12th five year plan.
- **Overall in power sector, we find that the expert group has overestimated the generation requirement, ignored supply side efficiency gains and underestimated the contribution of renewable energy. We strongly recommend reworking of the low carbon strategy for power sector.**

2. Steel sector

- Many assumptions made by the expert group for the iron and steel sector is debatable. The first is the growth rate. Assuming a growth rate of 10.67% for steel consumption from now till 2020, based on a seven-year data set (2001-2007), is untenable. This growth rate changes completely if we increase the size of the dataset. Even the Ministry of Steel doesn't expect steel consumption to go beyond 100 MTPA by 2020. **The expert group, therefore, has overestimated steel production figure for 2020.**
- On the other hand, the CO₂ emission intensity assumptions of the expert group look very optimistic. For example, it has assumed the current average emissions intensity of BF-BOF plants in India as 2.3 tCO₂/tcs. Very few Indian plants can reach this figure. A more realistic number for BF-BOF is 2.8-2.9 tCO₂/ tcs. Similarly, the emissions intensity figure for coal DRI-EF is 3.0-3.2 tCO₂/ tcs and not 2.5 tCO₂/ tcs as assumed by the expert group. **Expert group has also not referenced the data it has used for these assumptions.**
- Similarly, the projection of the expert group that steel production in India will largely be from BF-BOF and smelt reduction route (COREX/FINEX) is debatable in light of the scarcity of domestic coking coal and commercially unproven nature of COREX and FINEX. Till date only 2 MTPA of COREX at JSW Ltd. is available and JSW itself did not use this technology when it went for expansion. FINEX technology at POSCO in Korea only has only a 1.5 MTPA plant till date. **We believe that DRI-EF/IF will dominate the production process and therefore, we must put an action plan and an R&D plan for reducing the emissions intensity of this process.**
- Natural Gas Based Process has not been mentioned and discussed in the report as a low carbon strategy. Considering the fact that if the expert group is proposing BF-BOF process route based on imported coking coal, then it might be economically advantageous to import gas for steel production than import coking coal.
- The report has incorrect statements like:
 - Page 63: *"The high share of inefficient technologies and the dominance of coal based DRI process for providing input into steel production all contribute to relative inefficiency of Indian steel production until the 1990s"* – this is factually incorrect as coal based-DRI was not a major process route of steel production in 1990s.
- **Overall, we believe that the expert group has not considered the ground realities, has used figures that is either overestimation or underestimation and therefore has projected emissions, emissions intensity and production figures that is debatable. By ignoring the urgent need for technology upgradation in coal-based DRI-EF process, the expert group might be locking India in to an emissions intensive steel production route.**

3. Cement sector

- The report on cement sector also suffers from the use of outdated data. As per Indian Cement industry's own national survey, the Cement Clinker ratio in 2008 was 0.77. We estimate that this ratio is now 0.75. However, the expert group has used a

much higher figure of 0.86, which it has picked-up from IEA (2009). The IEA (2009), which actually states 0.84 as the ratio, in-turn has not given any particular reference for its report itself.

- As a result, the Planning Commission Interim report assumes that clinker cement ratio will reduce from 0.86 in 2007 to 0.80 in the Determined Effort by 2020. In the Aggressive Scenario it has assumed that the Clinker Cement ratio would reduce to 0.75 in 2020. **Both these ratio have already been achieved by the Indian cement industry.**
- **We feel that the emissions intensity target set by the expert group is rather conservative and the industry can do far better than that.**

4. Transport sector

Issues related to vehicle fuel efficiency standards

- The report has proposed 2% improvement in specific fuel consumption per year in determined scenario and 3% per year in aggressive scenario. But these targets have little meaning if the base year and the baseline are not mentioned to make the targets transparent and effectively enforceable. For instance, if the report adopts 2010 as the base year to decide the base line for sales weighted corporate average CO₂ emissions it would be about 140 CO₂ g/km. Then 2% per year improvement should give a 2015 target of 127 CO₂g/km and 2020 target of 115 g/km. The 3% per year should give a 2015 target of 122 g/km and 2020 target of 105 g/km. This brings clarity and transparency in the 2020 target. The report should therefore mention the base line for the base year 2010 and accordingly make the target numbers visible. The year 2012 can be considered as a base year only if the levels do not deteriorate from 2010 level. Any weakening of the baseline will weaken the target.
- The report has proposed minimum efficiency standards and also corporate average fuel economy standards. Both can coexist and ensure effective stringency if along with the CAFÉ targets the minimum 1-star rating under the fuel economy labeling scheme is set as the minimum standards and enforced starting 2014.
- We agree with the proposal for penalty for non compliance. But it is important to mention that this penalty is enforced under the Energy Conservation Act that has provided for penalty. But this strategy will also require independent monitoring and verification strategy by the government to assess the reported sales data for vehicles by the industry every year to enable transparent assessment of the company-wise compliance status.
- The justification given against the proposal for upfront tax on cars to neutralize the effect of price differences in fuels is not consistent with the co-benefit principles described in the subsequent section – especially on air pollution. While all may agree with the suggestion that *“It may be better to simply get rid of the relative distortions in fuel pricing by letting petrol and diesel be priced on the same footing, and let fuel efficiency and technology govern the choice of vehicle for the consumers,”* its actual implementation is still very uncertain. Therefore, given the political difficulties in equalizing the prices of two fuels and till the time it is actually done it is important to propose a mechanism to neutralize the incentive that the

diesel cars enjoy because of the fuel price differences. Simultaneously, also make introduction of clean diesel (10 ppm sulphur fuels used with advanced emissions control systems) conditional. Otherwise, the increase in their numbers will lead to higher toxic emissions and offset the efficiency gains. Under the co-benefit framework the chances of such trade-offs should be minimised.

- Also the key fiscal strategy that the report has not considered in the case of low carbon growth path is to reform taxes to align with the actual fuel efficiency levels of the vehicles. This will be more transparent, effective and efficient in turning the market around and a lot of ambiguity that currently exists can be taken care of.
- The report mentions emissions trading. But this should be allowed only with stringent standards. For example the reported and proposed lax limit of 135 g/km in 2015 means that many industry players would simply not have to worry about reducing emissions and trading will have no meaning. Moreover, these strategies will require very strong monitoring and enforcement strategies.

Issues related to the transportation and mobility

- While discussing the policy regime for transportation the report has highlighted only the national policies like National Urban Housing and Habitat Policy, National Urban transport Policy, JNNURM reforms etc. But given the fact that transportation policies and implementation largely rest with the state and city governments the report should be able to set the terms for state and city level policy. For instance, the report proposes integrated land use and transport planning to reduce travel distances etc. But this is possible only if the Town and Country Planning Acts and the city level Master Plans are also influenced. State level urban transport policies will have to align with national level policies that have been earmarked for effective action.
- The report has identified modal shift as one of the key strategies and has also given a target for 2020. We agree with that. But the report has proposed an improvement target of 5.5% for public transport and 3% for NMT by 2020. But it has not explained the basis of this estimate and this target will play out for different classes of cities listed in table 3.11. For instance, if we apply this target to the biggest class cities (Class 6) then these cities will not even be able to regain their 2011 level of modal share let alone improve beyond that. This seems like the case for other city classes as well. Therefore, explaining the assumptions and the basis of this estimate will help. This is also important because some cities have already stated much higher targets for 2020. For instance, Pune City Mobility Plan developed under JNNURM as well as the Master Plan of Delhi (which is now being taken to benchmark change in Delhi) states the target for modal share at 80:20 by 2020. This effectively means that Delhi with the current share of public transport at 40% will aim to increase share by another 40% by 2020. Either this is too ambitious or those proposed by the low carbon report are too little. As this will be an important target that will drive action it is important to explain the basis of these modal share targets. Otherwise different regulatory documents may create a conflict during the implementation phase.

Moreover, report should recognize the difference in emissions challenges and strategies for big cities and small cities/towns while listing priority interventions. Bigger cities will require aggressive reduction targets and strategies including scaling up of the high end public transport systems etc. The smaller cities and towns have bigger opportunities in their current level of low carbon ridership in NMT, IPT, walking etc .

Their strategies will be more preventive in nature. But will require investments to scale up these opportunities.

- The interventions menu may also include provision for innovative financing which is already part of the ongoing reforms.
- The mode classifications used in the table 3.11 on decreasing shares of public and non-motorized transport is very misleading as it clubs private vehicles with intermediate public transport (IPT) together. This is erroneous. IPT should be treated as separate mode and integrated with public transport. IPT meets high share of travel demand in small and medium towns as well as in big cities and are very suitable for frequent short travels that are also affordable in cities with short travel distances. If this mode is destroyed it will only lead to higher dependence on personal vehicles even for short distance trips. These are also important feeders for high end mass transit. Low carbon strategy will have to recognize their role and integrate them in the public transport strategy. NUTP will also have to be improved to include IPT as a strategy.
- **Overall the report can be further strengthened from the perspective of accountability of implementing agencies, compliance and capacity building strategies.**

5. Building sector

From energy consumption point of view, the distinction between commercial and residential buildings is fast disappearing. In metro cities, the new residential buildings are not stand-alone individual houses but multi-storied residential complexes. The total energy consumption in these residential complexes is no less than any commercial building. So one needs to question the relevance of applying ECBC or green building rating system to only large commercial buildings and not to large residential complexes. **By limiting its recommendation to commercial buildings, the expert group has completely ignored the large energy saving potential that exists in residential sector.**

6. Waste sector

The expert group has no strategy to reduce emissions from the waste sector. Instead it has estimated that the emissions from this sector will increase at the same rate as the past. This is certainly not good enough considering the fact that waste generation in India is likely to increase on the back of increasing consumerism.

7. Miscellaneous

The following statement of the expert group, as a justification for providing natural gas/LPG for cooking in rural and urban areas, needs serious debate:

Page 84: "The major impact could be from the household sector using biomass for cooking. If entire biomass for cooking is replaced by LPG and gas, both in urban and rural areas, it substantially reduces the emission levels coming from the household sector. However, large numbers of households currently use biomass for cooking and the overall CO₂ emissions are estimated at 138 million tonnes of CO₂-eq in 2007. In case all the households are provided with natural gas (in urban areas) & LPG (in rural areas) instead of biomass, the emission intensity of the household sector can be brought down substantially."

Comment: Traditional biomass is carbon neutral and there are some GHG emissions in form of methane and N₂O (and the emissions factors that are used for estimating GHG emissions from biomass burning is also guess-estimates). To attribute 138 million tonnes of CO₂-eq emissions in 2007 from biomass burning for energy needs of the poor is factually incorrect. To then say that biomass is more GHG emissions intensive than natural gas/LPG is debatable, to say the least.

CSE does not have any issue in espousing natural gas/ LPG for cooking because of comfort of use, handling and reduced indoor air pollution. However, it would like a wider debate on whether shifting away from traditional biomass based cooking should be done on the argument of GHG emissions. Secondly, it would like the opinion of the expert group on what should happen with the residual biomass that is currently being used to meet the energy need of the poor. Thirdly, if using biomass leads to higher GHG emissions as per the expert group, then the discussion of promoting improved wood-based 'chulhas' (cook stoves) by the government also needs to be reviewed.