17.07.2014

Global Calculator - Stakeholder engagement on the buildings sector, April 2014

The purpose of this note is to set out the feedback received on early version of the buildings sector of the Global Calculator in April 2014. This is to demonstrate the stakeholder engagement that has been undertaken during the production of the model. The majority of the comments have been addressed and the remainder are under consideration. The buildings sector is still a work in progress as of July 2014.

Stakeholders consulted

- Bai Rongchun – National Development and Reform Commission
- Bai Quan – Energy Research Institute
- Gao Hu – Energy Research Institute
- Jiang Yi– Tsinghua University
- Jiang Feng – China Household Electricity Appliances Association
- Chen Xinhua **-** Vice President, BP China
- Diego J. Rodriguez - The World Bank
- Henry Lee **-** Harvard University
- Neil Hirst - Imperial College, Grantham Institute

Comments

1. For access to electricity levels, it is too optimistic for all levels, since the electricity grid infrastructures costs a lot of time and need strong economic develop to support. So it seems no possible to achieve 100% access in 2050 for all residential, especially for rural residential.
2. In the model, the heating technologies have fixed assumption of heating efficiency, but I think the efficiency would improve in the future. It is not very important, just a small suggestion.
3. I think the methodology in the model is quite clear and easy understand, but if there is a methodology document, it would be great.
4. The building insulation seems much ambitious in level 4. The 0.25 Watt/(m^2*C) is the most efficiency building in the world, but there is a lot of existing building with lower efficiency. These existing buildings will still be used in the next 40 years, so they can't be so much efficiency in the average.
5. The efficiency for cooking is continuous improving, so for the assumption of efficiency you should reflect this trend.
6. The average efficiency for appliances has a strong relation with the lifespan of the appliances. In the model, it is quite good to model the lifespan of the appliances, because people will have difference habits for using appliances, people may substitute the appliances before its

lifespan and buy a new one. The more frequent people substitute their appliances, the more efficient appliances they will have. So there should by some relation between the lifespan and efficiency.

7. The biomass energy is widely used in the rural area for cooking and heating, even when they have access to electricity. In China, also the total volume of biomass is reducing, but in some area of south China, the biomass is still very important energy. So I think the model should tell us how much biomass is used for residential.

8. The level range of building floor area seems too big. For the level 1, it seems too big. The building floor area grows very slow because of the economic and capacity. So it may be 30-35 square meter per capita in 2050 is for level 1.

9. In the model, there is a heating and cooling hour to calculate the energy demand for heating and cooling, but the climatic zone has big influence for the energy demand in heating and cooling. My advice is you could use a proportion of household that need heating and cooling. The proportion could be fixed number or a little growing. And the house for these heating and cooling areas may be much bigger than the model used now, which is more reasonable.

10. It is hard to model the appliance ownership at a global level. People in different country and income have difference consumption behavior. In the US, people own a lot of dishwasher and cloth dryer, but in China these appliances are not popular. So the level for appliance ownership of dishwasher and cloth dryer should be much lower.

11. The ownership level of miscellaneous appliances seems very lower in all levels. The traditional appliances will grow not so much than miscellaneous appliances the in the future.

12. The methodology of the model is quite excellent, the model could give us the whole picture of energy and systematic inventive thinking for the energy, economy, environment and behavior.

13. I am thinking about how could this excellent work could help the business company to perform better in the market. Maybe the model should be give some information to the business to help them laying out the future blueprint.

14. This is very good calculating framework for energy and environments, the model is simple enough for user and flexible enough for custom modify. The model is very powerful to analyze the energy demand and supply and the CO_2 emissions.

15. I think some levers should consider more about the economic development. In the long run, the world economy will continue growth and people could continue to improve their life standard.

16. The model is not driven by economy but residential behaviors, but the economy is no doubt a key factor that could influence the behaviors. And there is big potential for people in the developing area to improve their life. So I think in the future the appliances ownership, lighting ownership, building size will increase in all scenario.

17. The model is a very powerful tool to support the public policy. The model makes it very easy to get the government officer, research experts and public together to discuss the same topics.

18. There are two things I think the model should be improved. One is the model should give some guidance for residential of their daily life. That means we should extract some common knowledge for residential, like own a smaller but more comfortable house, use more efficiency appliances could benefit themselves. The purpose for this is to raise public

understanding of how they could help to solve the problem of energy shortage and climate issues. The other thing is to building the relation of public policy and the model. We should know when we have chosen one pathway, how could we get the target and what the policy we need to support the target. I think this may be too complexity for the model, but the team should think more application or engage more experts to debate the issues.

19. The model is very helpful to show the big picture of energy and climate issues we face now. The model helps us know that the energy and climate problems are not just local problems but global problems. The problems can't be solved by one or some countries. It needs countries strengthen energy cooperation and coordinate energy policy. The model supplies a good platform to analyze and discuss the issue.

20. I am not a modeling expert, but I am thinking about how this tool could help global energy governance and how we could use the tool to reach a consensus for different countries.