



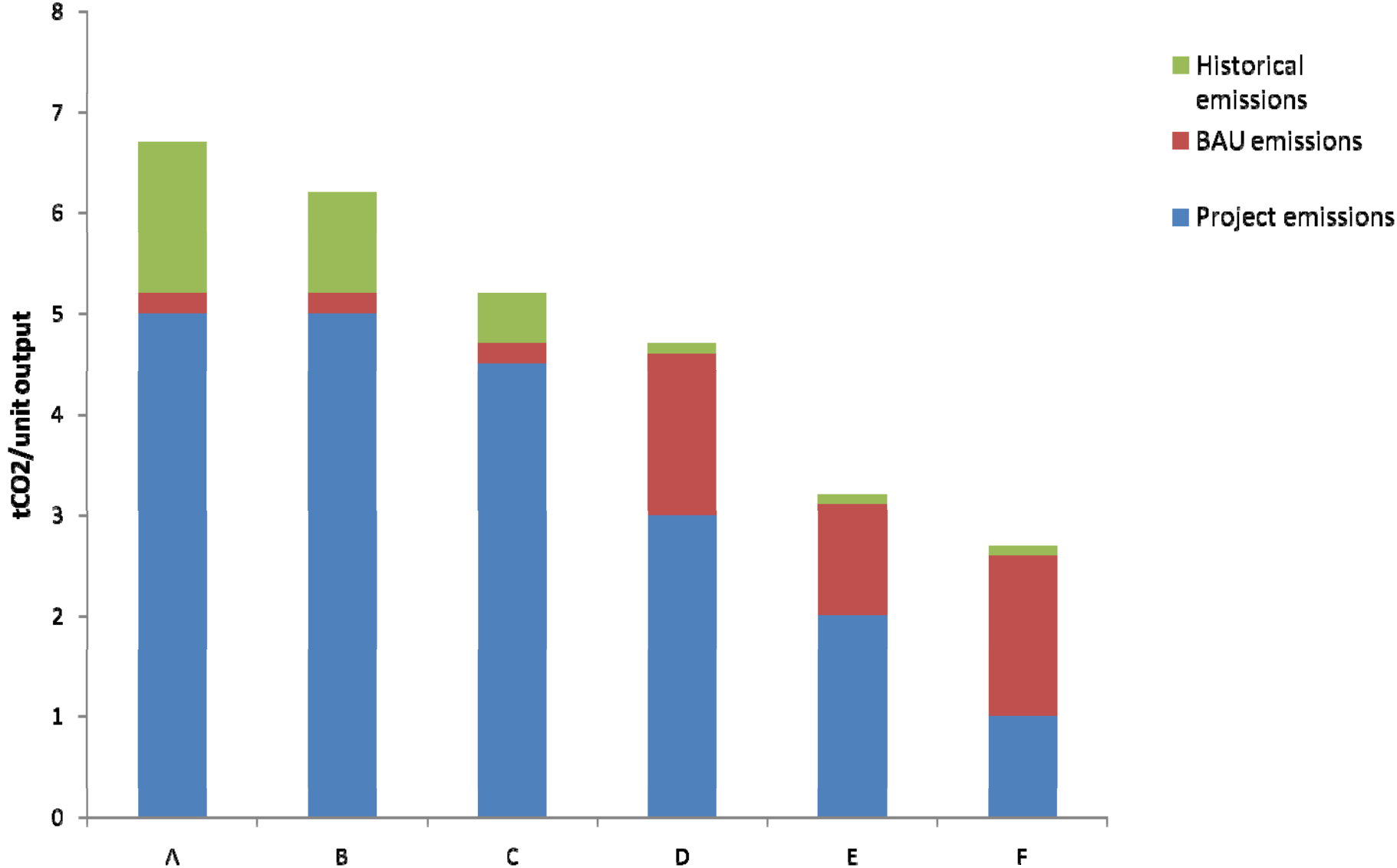
SUPPRESSED DEMAND: DEFINITION AND CONSIDERATION OF DIFFERENT APPROACHES TO ADDRESS IT IN CDM METHODOLOGIES

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Project approval under traditional approach to additionality



Source: Poyry



Suppressed Demand Definition - why historical energy consumption not appropriate

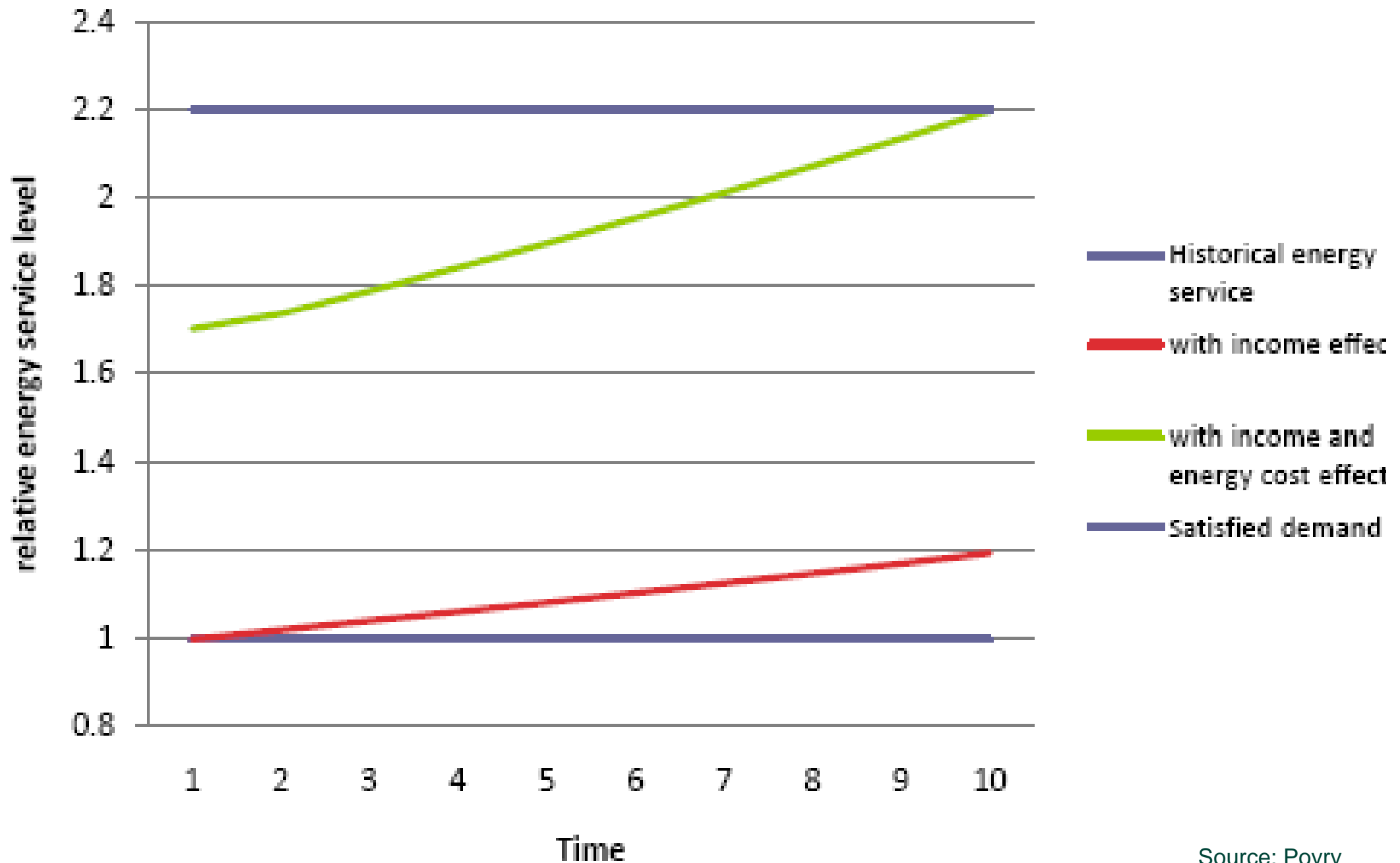
There are two main reasons why historical energy consumption may not be a good proxy for future energy consumption or future energy service level demand:

1. As incomes grow over time, energy service demand and consumption would increase, so that even without access to electricity it is likely that energy consumption in the —without project scenario would rise over time. —**income effect**
2. Combination of low household incomes and high unit costs of energy means households cannot afford sufficient energy for their basic needs. This is the —**energy cost effect**. It is a combination of lack of physical access to an energy source or technology with a high unit cost of existing energy services. UNFCCC paper (EB61 annotated agenda annex) 2 examples where this occurs:
 - E.g. CDM project can result in increase in demand since technology reduces cost of service e.g. lumen per hour. E.g. switch from kerosene lamp to LED
 - Situations where there are no emissions in the baseline scenario e.g. waste water treatment plant, landfill, displacement of dung cookers with solar cookers. “Do we have to wait for people to get dirty before they get clean! (Steve Thorne presentation)

Definitions

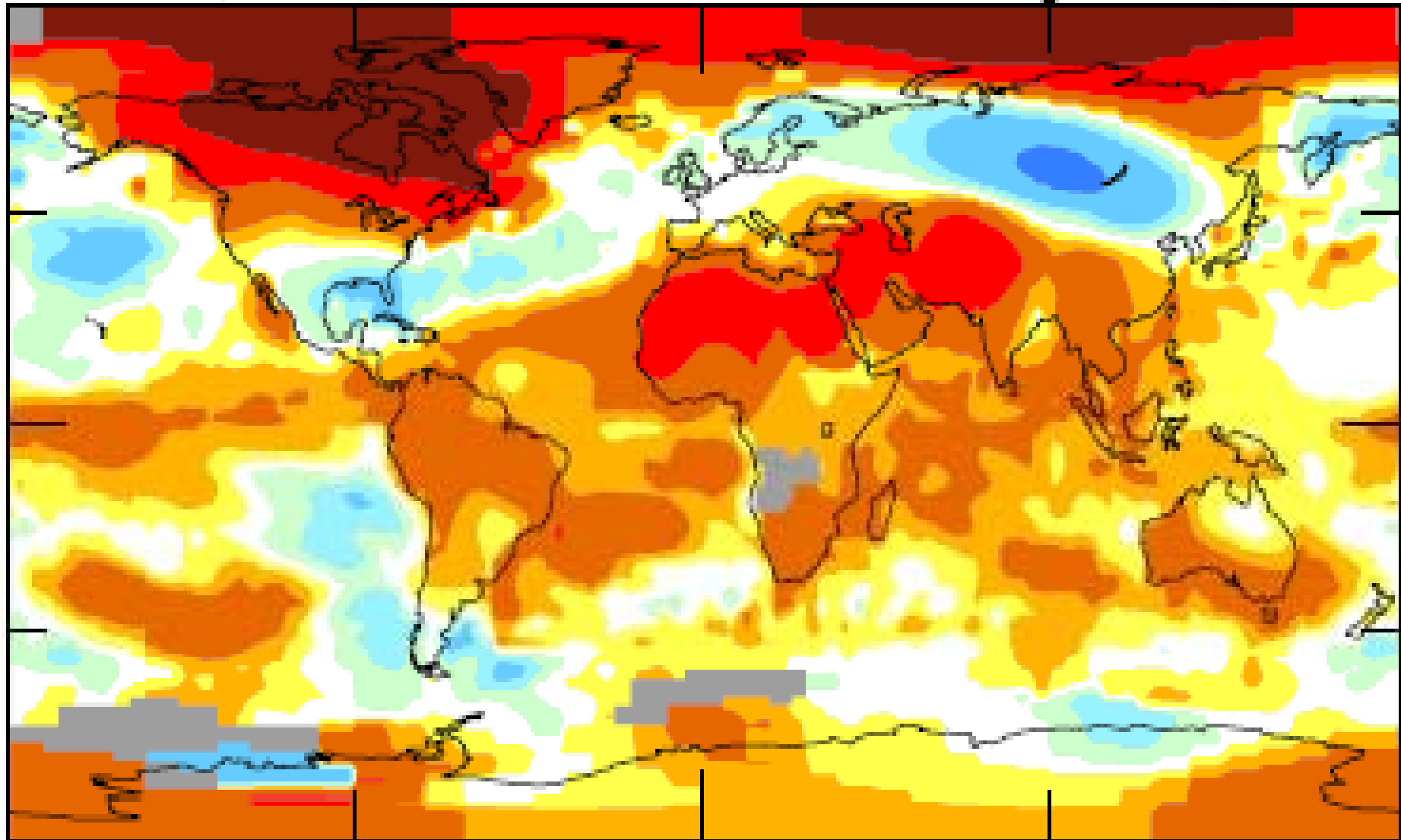
- **“Suppressed demand”** is the situation where energy services provided are insufficient – due to poverty or lack of access to modern energy infrastructure – to meet the needs of stakeholders given their human development needs (CDM Gold Standard biogas digester meth).
- **“Satisfied Demand”** the level of energy services that would be reached with access to better quality and more affordable services, and that would be —adequate and —reasonable for, in this case, rural households to meet their basic needs. i.e. satisfied demand is when the income effect and energy cost effect are overcome. Therefore:
Satisfied Demand = level of service suppressed by income effect + level of service suppressed by energy cost effect.
- Critical to resolving suppressed demand is defining when demand is satisfied.

Figure 1. Relative energy service levels for different baseline options

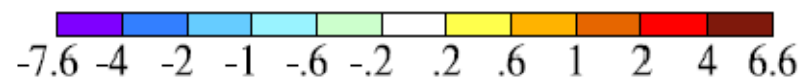


Is there a way to consider suppressed demand and retain environmental integrity?

2010 (the warmest out of 131 years)



NASA data for Jan-Apr 2010, 0.75°C
above 1951-80 base period



Can we measure real income and energy cost effects that suppress demand?

- Real measurements would be ideal:
 - Baseline that showed what service demand e.g. lighting would be with the income effect and energy cost effect measured .
 - Need a demand curve that shows relationship between unit cost of energy service and demand for that service
- ***Not possible:*** ex ante measurement depends on too many socio-economic and site specific variables (e.g. climate and actual level of development)

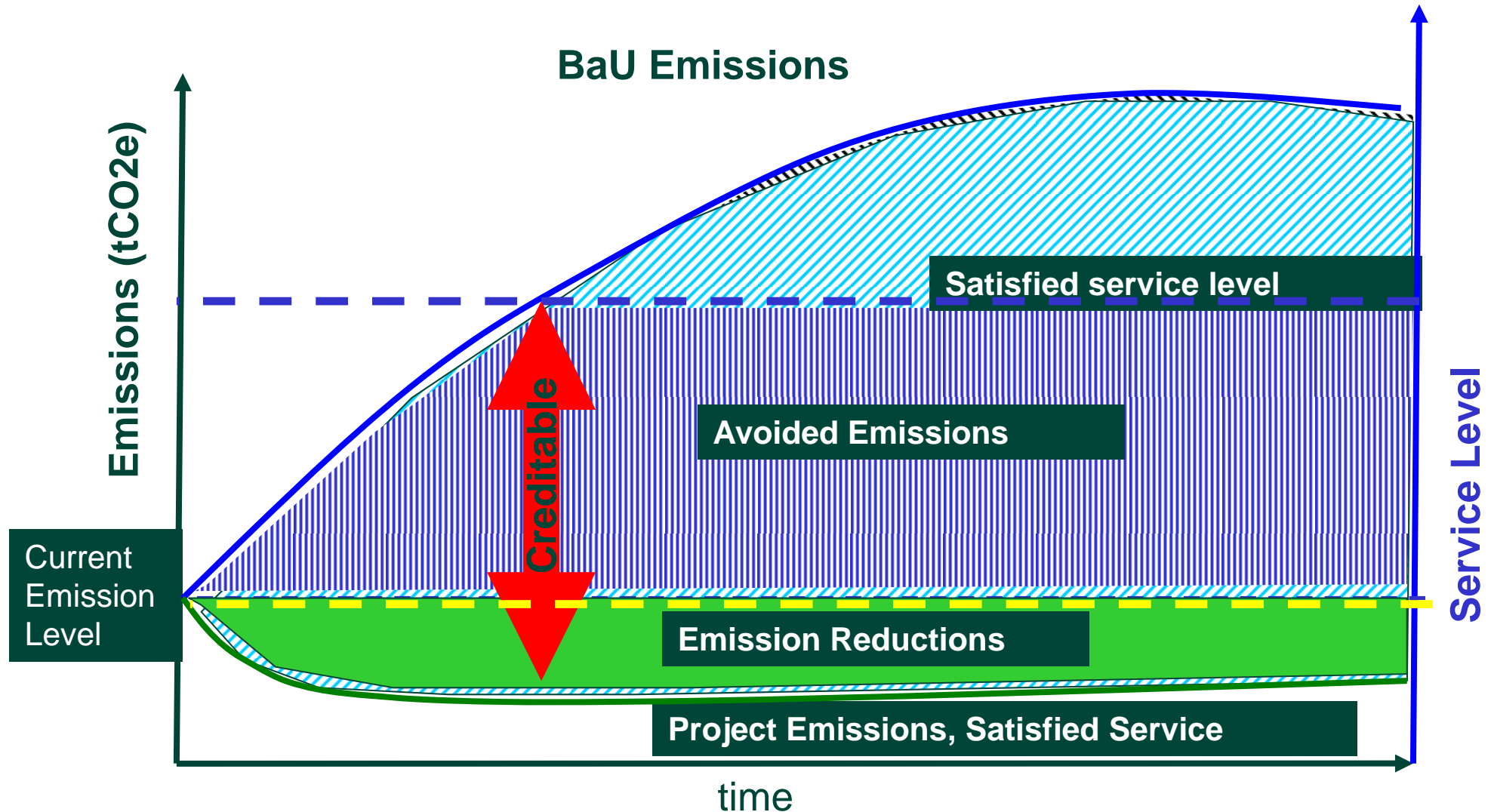
Project service/consumption service level used to express suppressed demand?

- SSC WG address suppressed demand in meths (e.g.. AMS-I.D and ACM0002, & meths for building EE AMS-III.AE) by using project consumption or project activity service levels as basis for baseline.
- i.e. project energy service level is assumed to be the without income and energy cost effect baseline. We assume that after implementation of the project activity, HH face lower energy service prices and will purchase adequate levels of services.
- Problems with approach:
 - Measuring energy consumption for a specific energy end use is difficult. Measure actual service levels e.g. lumens of light not possible.
 - Even if costs of service are reduced not necessary that all will be able to afford it. i.e income effect may not have been addressed.

Minimum service level to address Suppressed Demand

- “Minimum” service level is a proxy for satisfied demand established as a “minimum level of service” which would result in an adequate service to meet basic human needs.
- Minimum service levels exists for many types of technologies and services e.g. Millennium Development goals clean water, adequate comfort levels (e.g. Space heating and cooling), nutritional levels etc.
 - Define minimum standard level based on literature
 - Convert this to emissions by identifying baseline technology
 - This then eliminates the need to monitor baseline while providing reasonable, objective baseline
- Not appropriate for all sectors/technologies and still have to agree the level.

Suppressed Demand as service levels suppressed by energy cost effect and income effect.



Possible standards for household energy services

| Energy Service | Degree of Suppressed Demand | Current appliance | Current energy source | Possible service standard |
|----------------|-----------------------------|------------------------|-------------------------|----------------------------|
| Lighting | High | hurricane lamp, candle | kerosene | lumens x rooms |
| TV | High | DC TV | car battery, generator? | hours/week |
| Radio | High | DC Radio | dry cell, car battery | hours/week |
| Cooking | Low? | none, or basic stove | biomass, kerosene | ?? |
| Water heating | Med | similar to cooking | biomass, kerosene | Litres of hot water |
| Space heating | Med | similar to cooking | biomass | Ambient temperature indoor |

Source: Poyry

Thanks for listening