Annotation Agenda #47

AMS-III.AA Transportation Energy Efficiency Activities using Retrofit Technologies

AMS-III.AA Transportation Energy Efficiency

- Engine retrofit of existing/used vehicles for commercial passenger transport for fuel efficiency
- 6,000 tricycles with high emission carbureted 2-stroke engines retrofitted with direct in-cylinder fuel injection (also called Direct Injection or DI)
- Studies show DI technology significantly reduces emissions from 2-stroke engines[1]
- Based on tests for 200,000 km PPs estimate reductions of 1 tCO2e per vehicle each year
- Co benefits include 89% reduction of hydrocarbons and 76% reduction in CO

[1]Mark Arche and Greg Bell, 'Advanced Electronic Fuel Injection Systems – An Emissions Solution for both 2 and 4 stroke Small Vehicle Engines,' SAE International, Paper no. 2001-01-0010, (USA, 2001)

AMS-III.AA Transportation Energy Efficiency

- Baseline emissions: average annual distance driven of project vehicles times the baseline emission factor times the actual number of operating project vehicles
- Baseline emission factor based on fuel efficiency
  - actual fuel consumption of a sample of non-retrofitted comparable vehicles operating in comparable traffic situations is measured.
  - Comparable vehicles are those that with similar age structure, motorization and passenger load capacity
  - Comparable traffic situations are considered as vehicles operating in the same city or – in case of inter-urban traffic – operating on comparable inter-urban routes.
  - Representative sample of vehicles as per statistical methods (90% confidence interval and 10% error margin).
- Measurement principles and techniques used for the baseline sample shall be identical to the project sample. The lower bound of 95% confidence interval is taken for baseline fuel efficiency. The upper bound of 95% confidence interval is taken for project fuel efficiency.
- If the vehicles are used in inter-urban traffic situations the same routes should be used by baseline and project vehicles.

Annotation Agenda #48

AMS-III.AB Avoidance of HFC emissions in Standalone Commercial Refrigeration Cabinets

Avoidance of HFC emissions in Standalone Commercial Refrigeration Cabinets

- Avoidance of HFC 134a refrigerant emissions during the life cycle of commercial standalone refrigeration equipment (0.2kg < HFC usage < 6kg) such as freezer ice cream cabinets used in storage and vending of ice cream.
- Fugitive emissions during manufacture, usage/servicing and disposal of cabinets is the baseline
- Project cabinets use refrigerants and foam blowing agents having no ozone depleting potential (ODP) and negligible/low global warming potential (GWP)
- The cabinets introduced by the project activity are equally efficient or more energy efficient than the cabinets that would have been used in the absence of project activity.
- Retrofit of HFC 134a cabinets to use alternative low GWP refrigerants is not eligible under this category.
- PP is using HFC-134a cabinets for at least three years and has not been using refrigerants with a low GWP prior to the start of the project activity in significant quantities.

Avoidance of HFC emissions in Standalone Commercial Refrigeration Cabinets

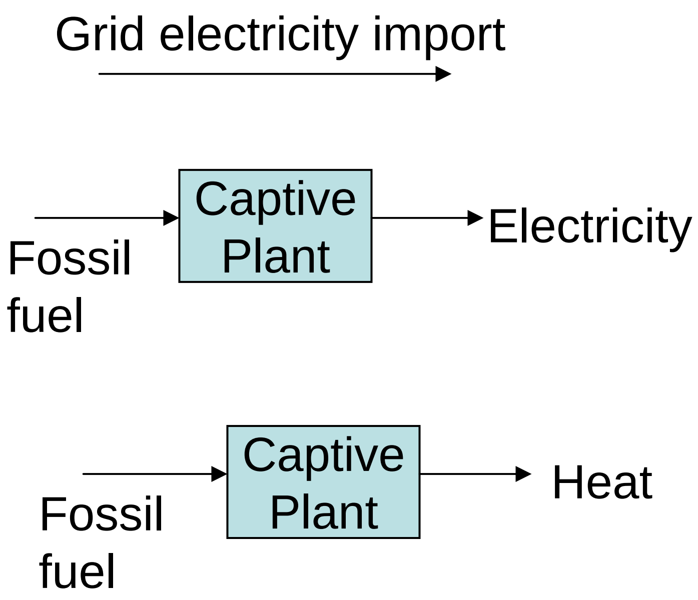
- IPCC default values for emission coefficients may be used in the absence of country specific or project specific data. Any project specific data shall be conservative values estimated in accordance with the tier 2(a) emission factor or 2(b) mass-balance approach specified under Chapter 7 of 2006 IPCC Guidelines for National Greenhouse Gas Inventories. When using project specific data, any significant difference (more than + 10%) between project data and default values in 2006 IPCC guidelines shall be substantiated including supporting data and evidences.
- For commercial refrigeration IPCC assigns the following leakage rates
  - 0.5 – 3% of initial charge manufacturing emissions
  - 1-15% of initial charge for annual operational emissions

Annotation Agenda #49

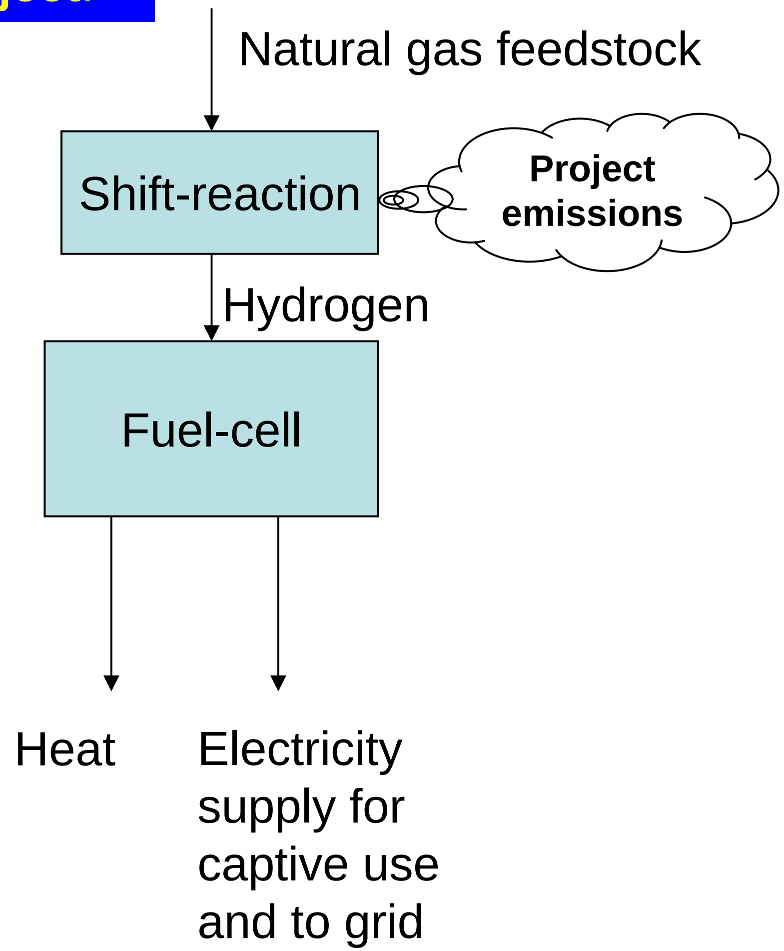
AMS-III.AC Electricity and/or heat generation using fuel cell

AMS-III.AC:Electricity and/or heat generation using fuel cell

Baseline:



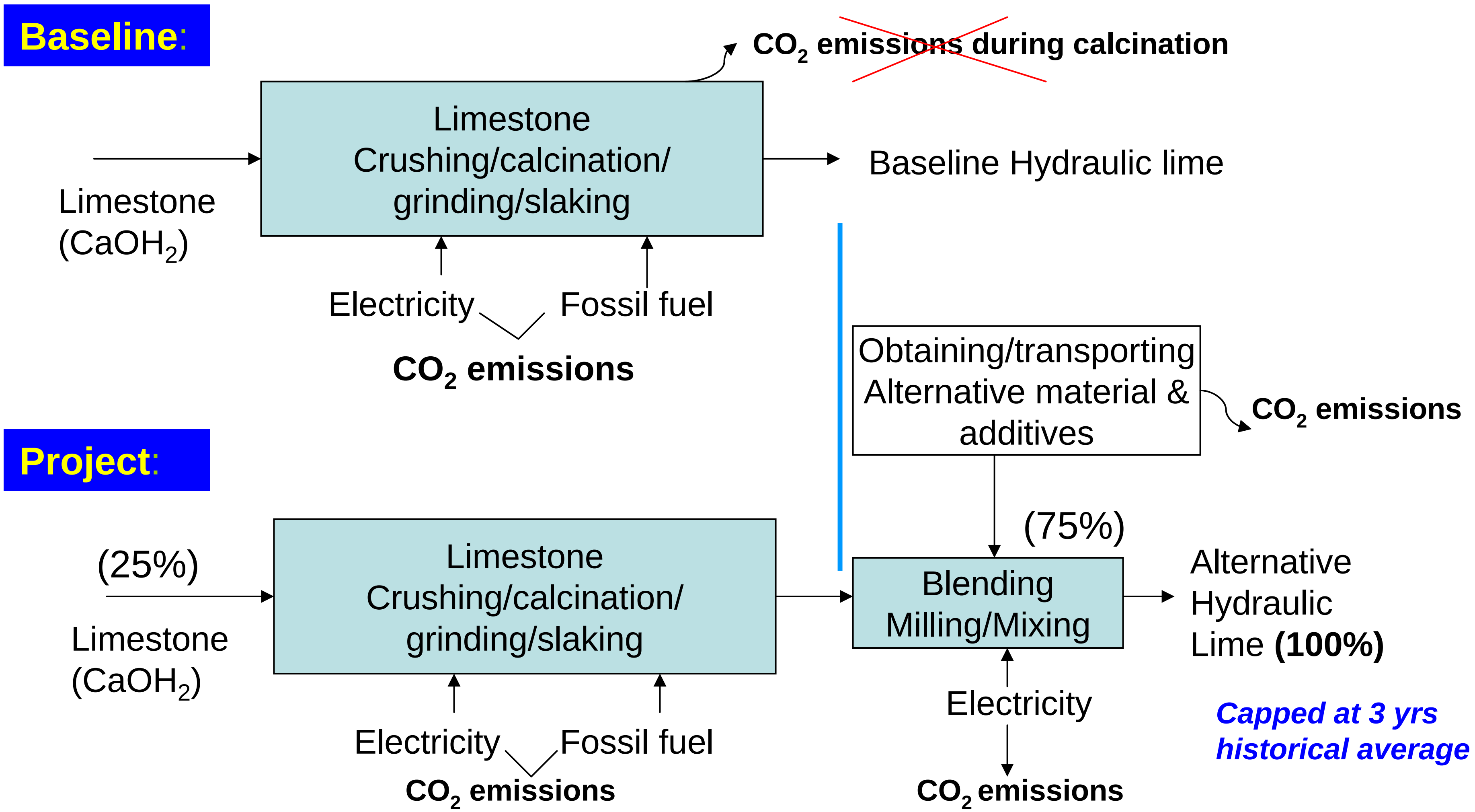
Project:



Annotation Agenda #50

AMS-III.AD Emission reductions in hydraulic lime production

AMS-III.AD:
Emission reductions in hydraulic lime production

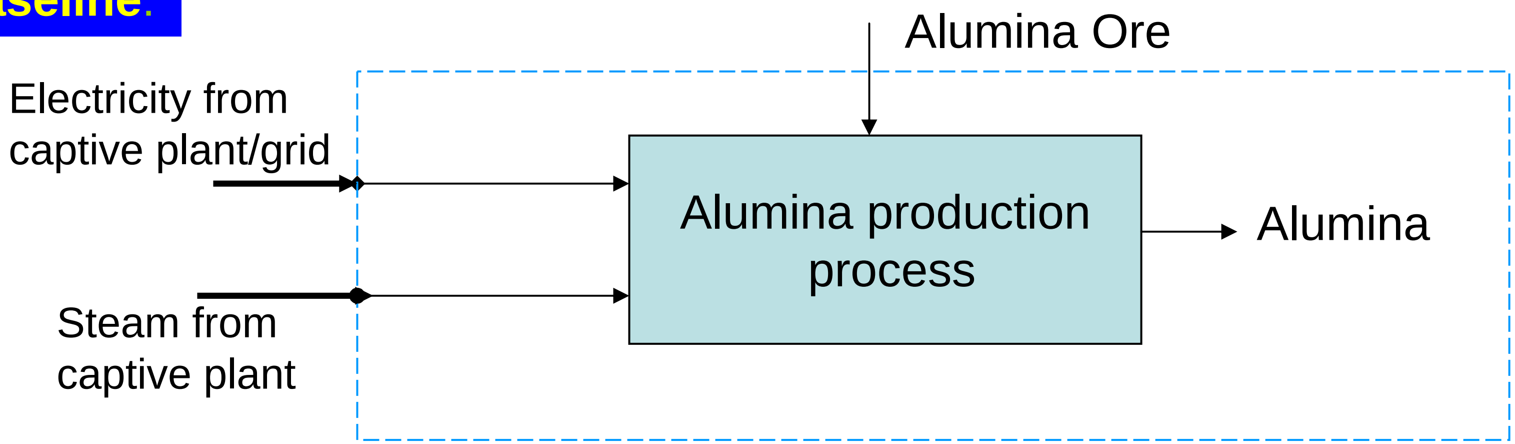


Annotation Agenda #51

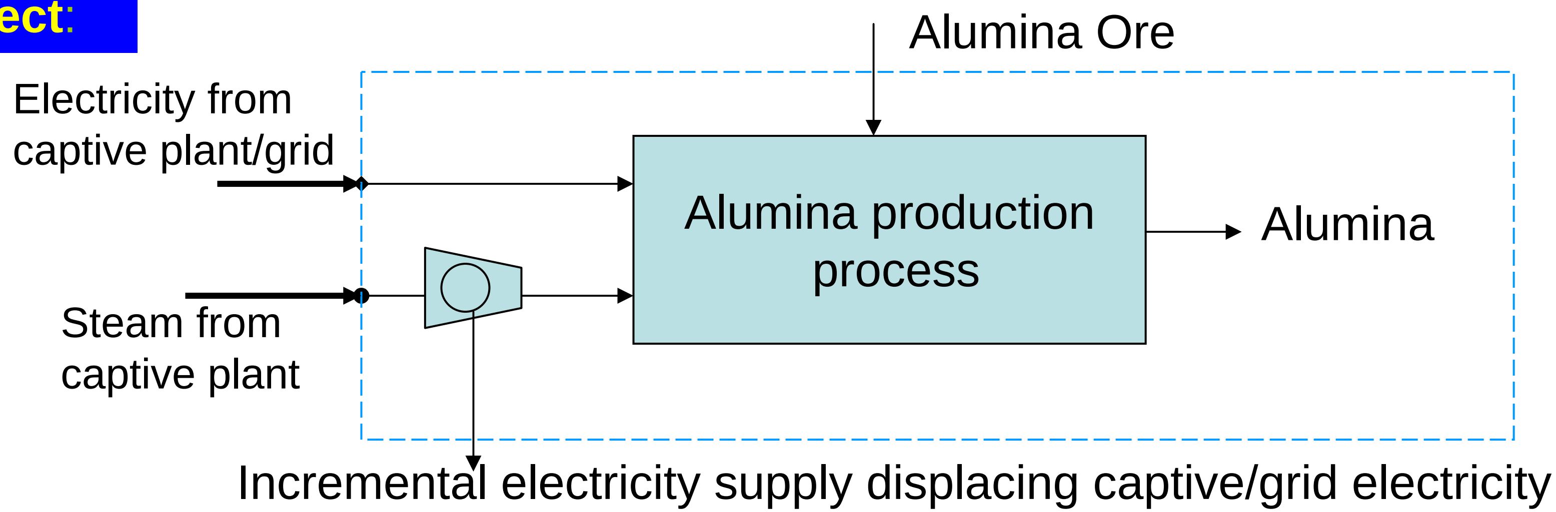
AMS-II.K Industrial process optimization for energy efficiency and electricity generation

AMS-II.K: Industrial process optimization for energy efficiency and electricity generation

Baseline:



Project:



Annotation Agenda #52

AMS-III.AE Shift from high carbon intensive fuel mix ratio to low carbon intensive fuel mix ratio