

# Quantification Protocol for Residential Green Building Projects

Alberta Protocol Stakeholder Consultations ~ January 2008  
Baseline Emissions Management Inc.

# Residential Green Building Projects

- Seed Materials
  - AB Protocols?
  - Good Practice Guidance
    - CDM protocols
    - Project evaluations
- Technical Review
  - Alberta process with gov't and industry stakeholders
- Two streams of protocols
  - Generic

# Residential Green Building Projects

- **Project Condition**
  - Use of different construction methods and materials + higher energy efficiency technology (non-electric)
- **Baseline Condition**
  - Existing buildings
  - Average, new buildings

# Residential Green Building Projects

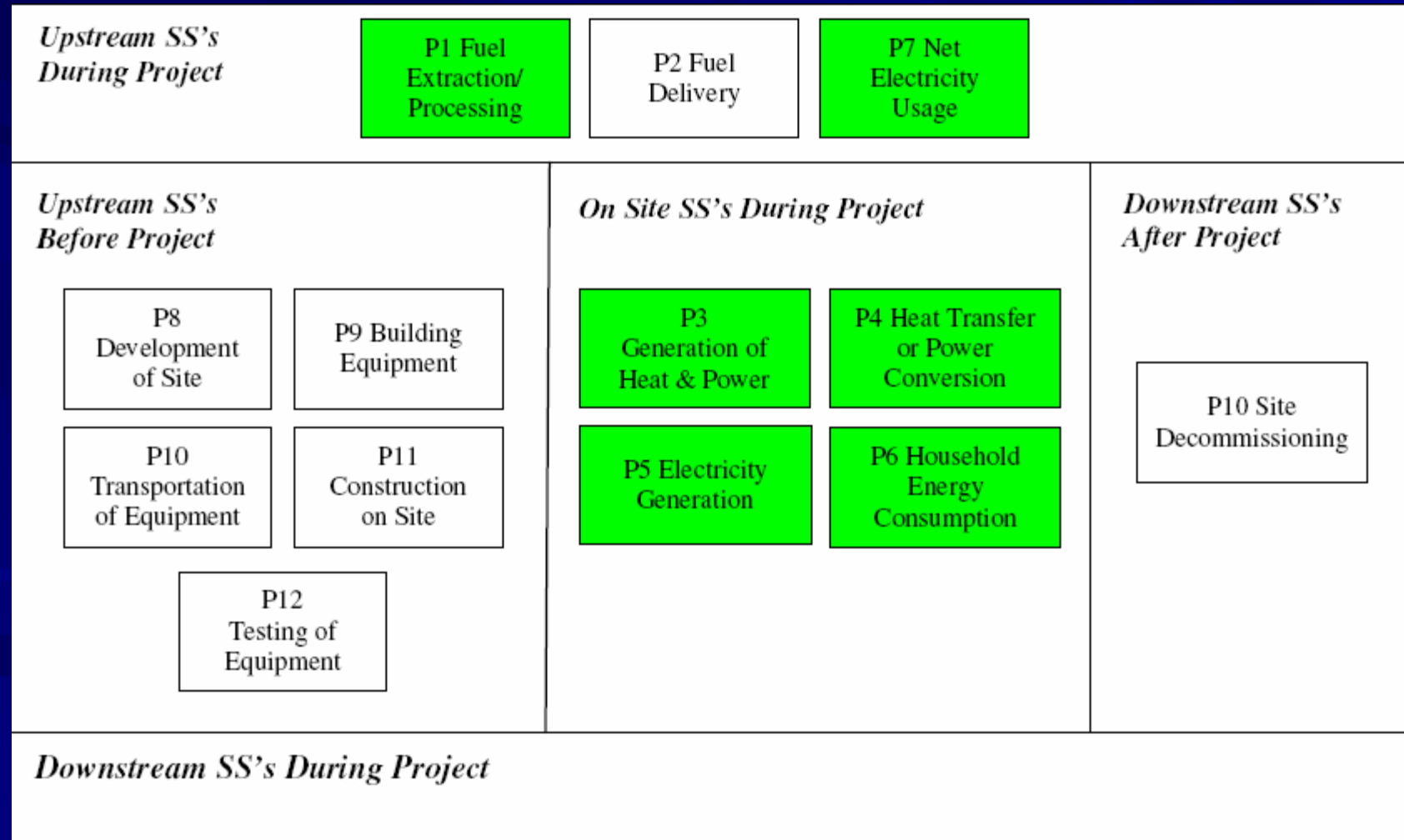
- Functional Equivalence
  - Equivalent energy production
  - No change to the product or service
- Emission Reduction Mechanisms
  - Reduce use of fossil-fuel derived energy in building usage
    - Implementation of new building methods, and facility retrofits that result in overall efficiencies in energy use per unit of productivity
- Applicability criteria
  - New buildings must exceed the ASHRAE 90.1 standard;
  - Retrofits to existing buildings must improve emission performance as established by the difference between pre- and post-retrofit energy audit;
  - The quantification of reductions achieved by the project is based on actual measurement conducted in energy audits.
    - Existing buildings: include both a pre-project and post-project energy audit.
    - New buildings: based on a post-project energy audit and compared to the established baseline energy consumption levels for new buildings from ASHRAE 90.1 standard.

# Residential Green Building Projects

- Flexibility mechanisms
  - Reductions in onsite electricity or fuel use are dealt with outside the scope of the protocol as part of the energy efficiency protocol and renewable energy protocols.
  - Site specific emission factor usage

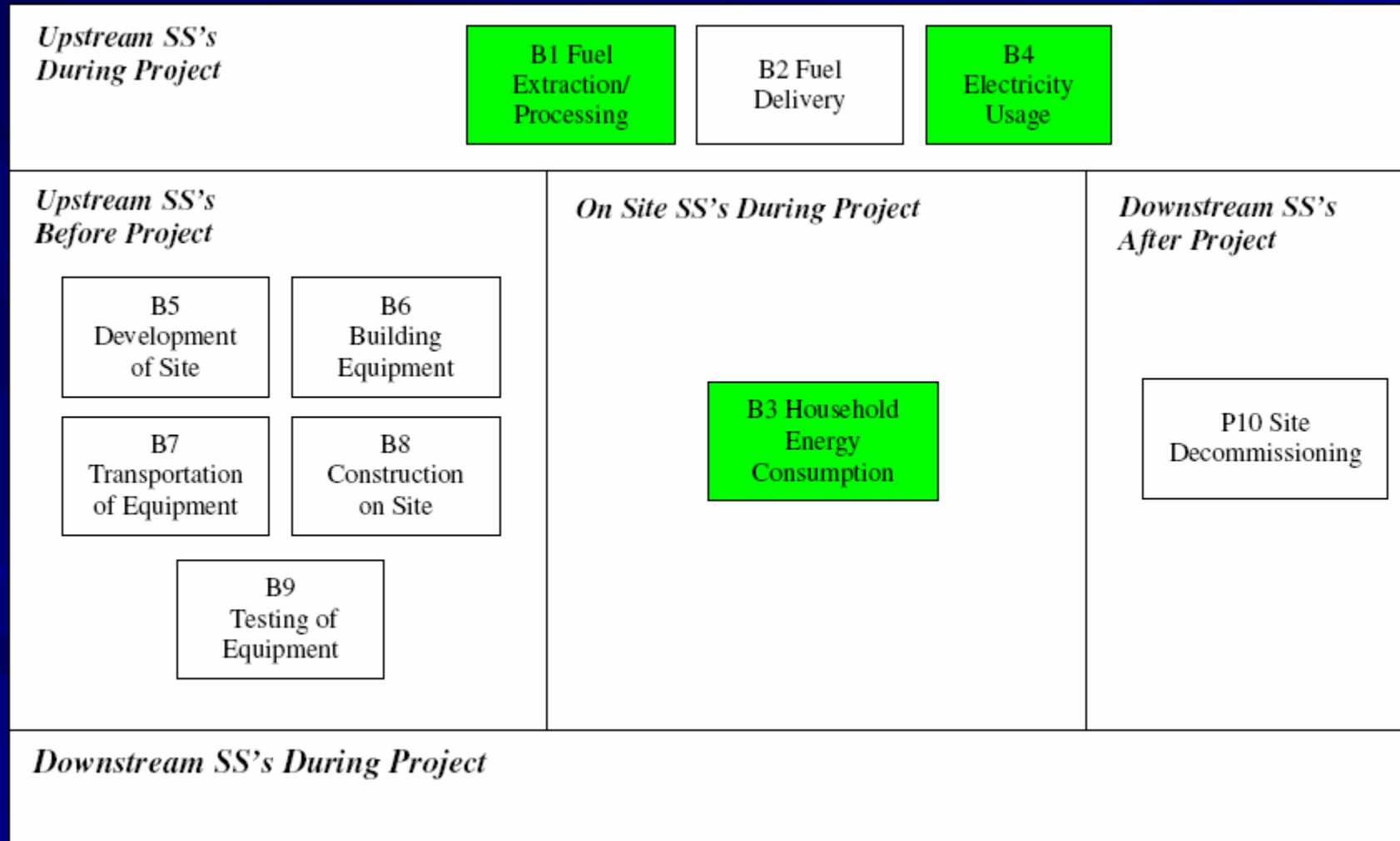
# Residential Green Building Projects

## Project Condition



# Residential Green Building Projects

## Baseline Condition



# Residential Green Building Projects

$$\text{Emission Reduction} = \text{Emissions}_{\text{Baseline}} - \text{Emissions}_{\text{Project}}$$

$$\text{Emissions}_{\text{Baseline}} = \text{Emissions}_{\text{Fuel Extraction/Processing}} + \text{Emissions}_{\text{Electricity Usage}} + \text{Emissions}_{\text{Household Energy Consumption}}$$

$$\text{Emissions}_{\text{Project}} = \text{Emissions}_{\text{Fuel Extraction / Processing}} + \text{Emissions}_{\text{Total Onsite Energy Use}} + \text{Emissions}_{\text{Net Net Electricity Usage}}$$

- Data Capture
  - Volume of fossil fuel consumed
  - Amount of electricity used

# Residential Green Building Projects

- Questions and Comments
  - Technical issues?
  - Policy concerns?
  - Customization questions?
  - Linkage issues?