



Urban Areas & PoA

Carbon Finance Unit, The World Bank



September 25, 2009

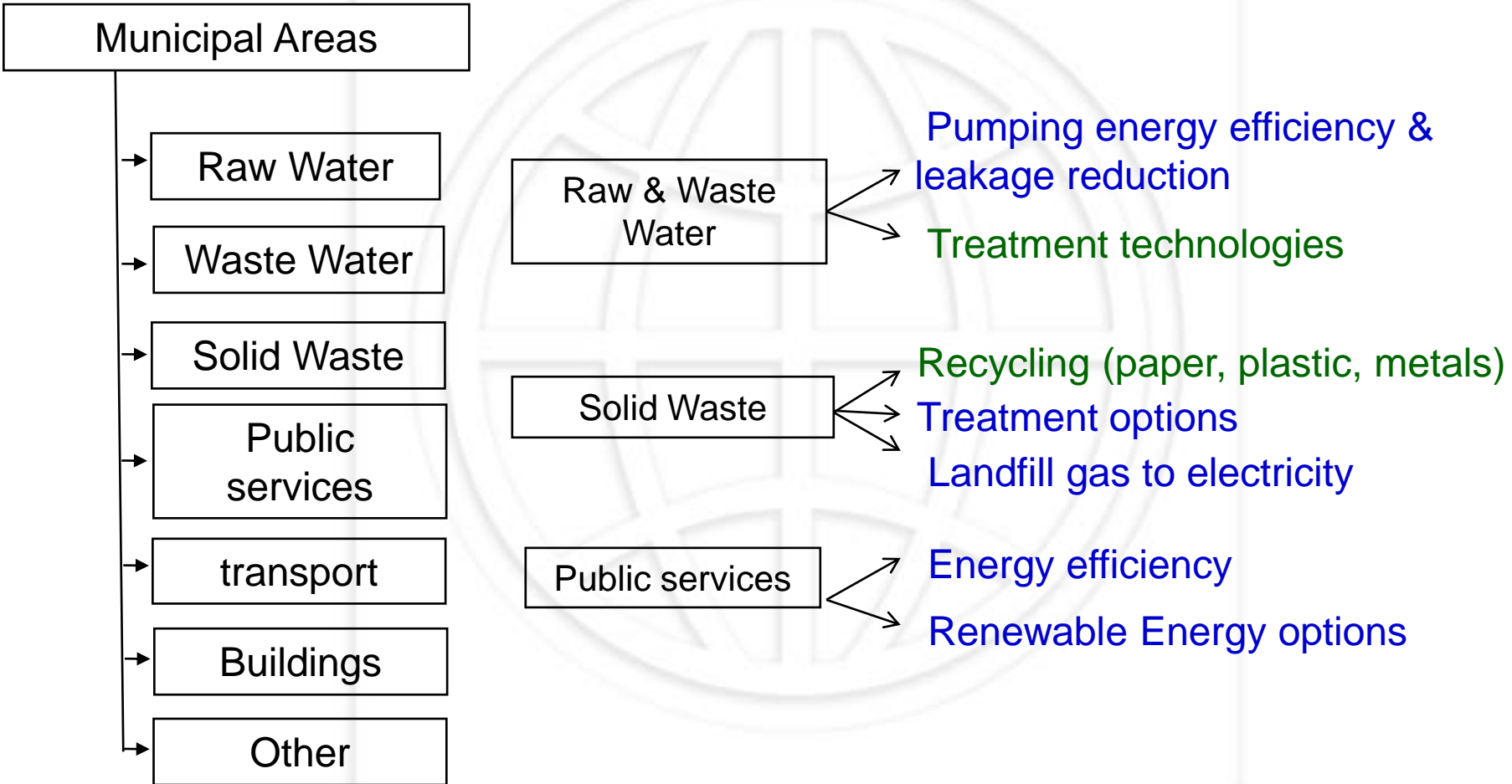


Why Cities and Carbon Finance?

- Fastest growing source of greenhouse gas (GHG) emissions
- High level of economic growth with very large population inflow
- Continuous challenge to balance development and environmental needs
- Inadequate level of engagement in CDM
- Potential for carbon finance to facilitate low-GHG development in cities

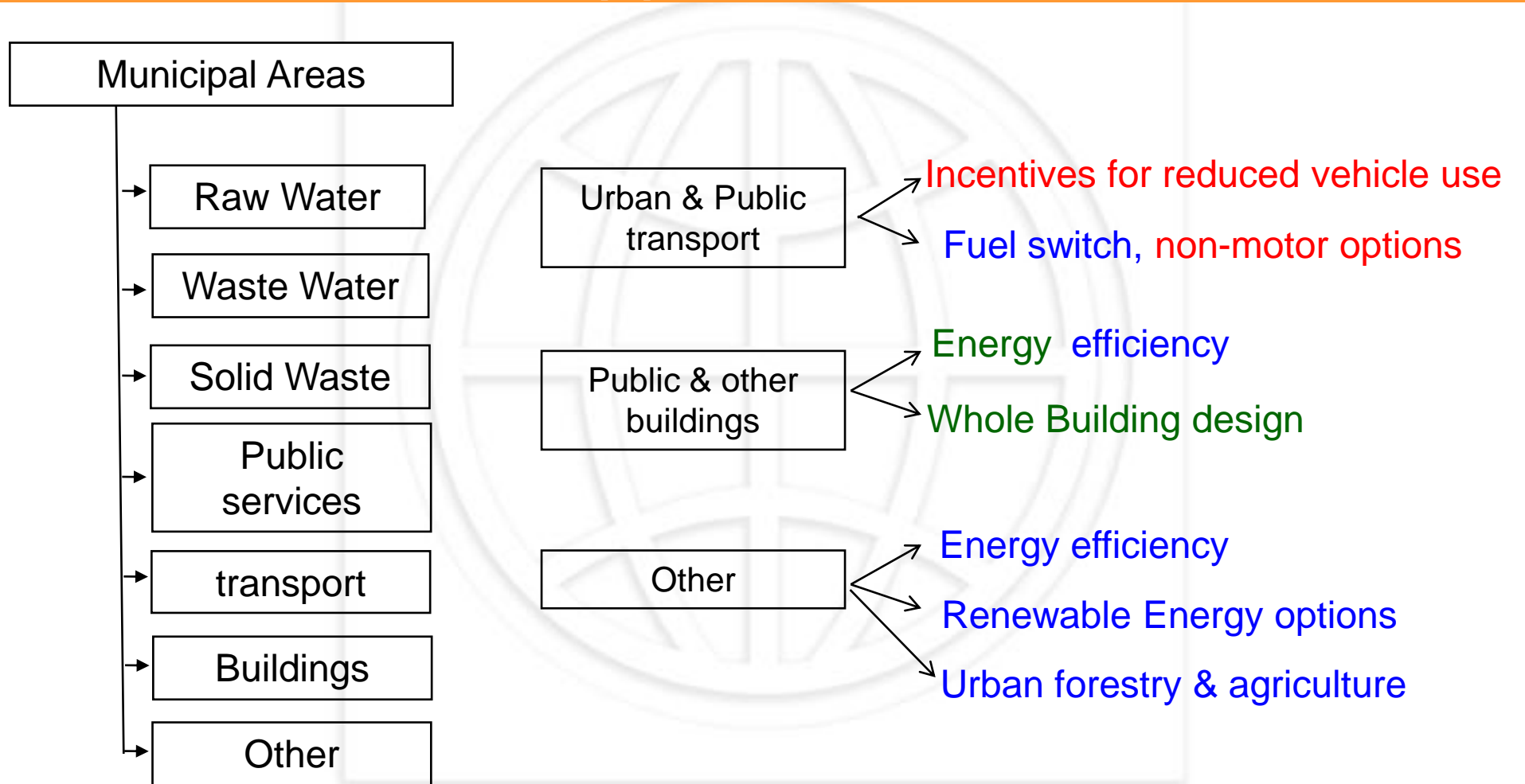


Opportunities





Opportunities





Calculating ER in Energy Sector

| Energy Sector | Example of Intervention | CDM Methodology | Estimation Approach |
|--|---|--------------------|---------------------|
| <u>Energy Efficiency</u> (demand-side): | Street-lighting | AMS II.C | kWh/km |
| | Water pumping | AM0020 | kWh/m ³ |
| | Buildings envelope, heating and cooling | - | W/m ² |
| | Electrical equipment (lighting, refrigeration, etc) | AMS II.C AM0048 | kW/TR kW/lm |
| <u>Energy Efficiency</u> (supply-side): | New District heating networks | AM0044 | kJ/km |
| | Efficiency improvement in district heating | AM0058 | kJ/unit of fuel |
| <u>Renewable</u> <u>Energy</u> | Solar water heating | AMS I.C | kWh/m ³ |
| | Solar lighting (streets or households) | AMS I.A | kWh/km |
| | Heat pumps for heating and cooling | AM0072 AMS I.C | kWh/ m ² |

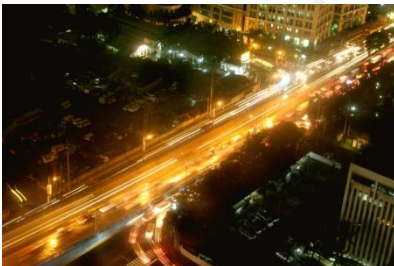


Solar Power in Cities



Solar Water Heaters

- Residential and non-residential application
- Reduces peak electricity demand
- Easier to install, operate and maintain
- Significant initial investment cost

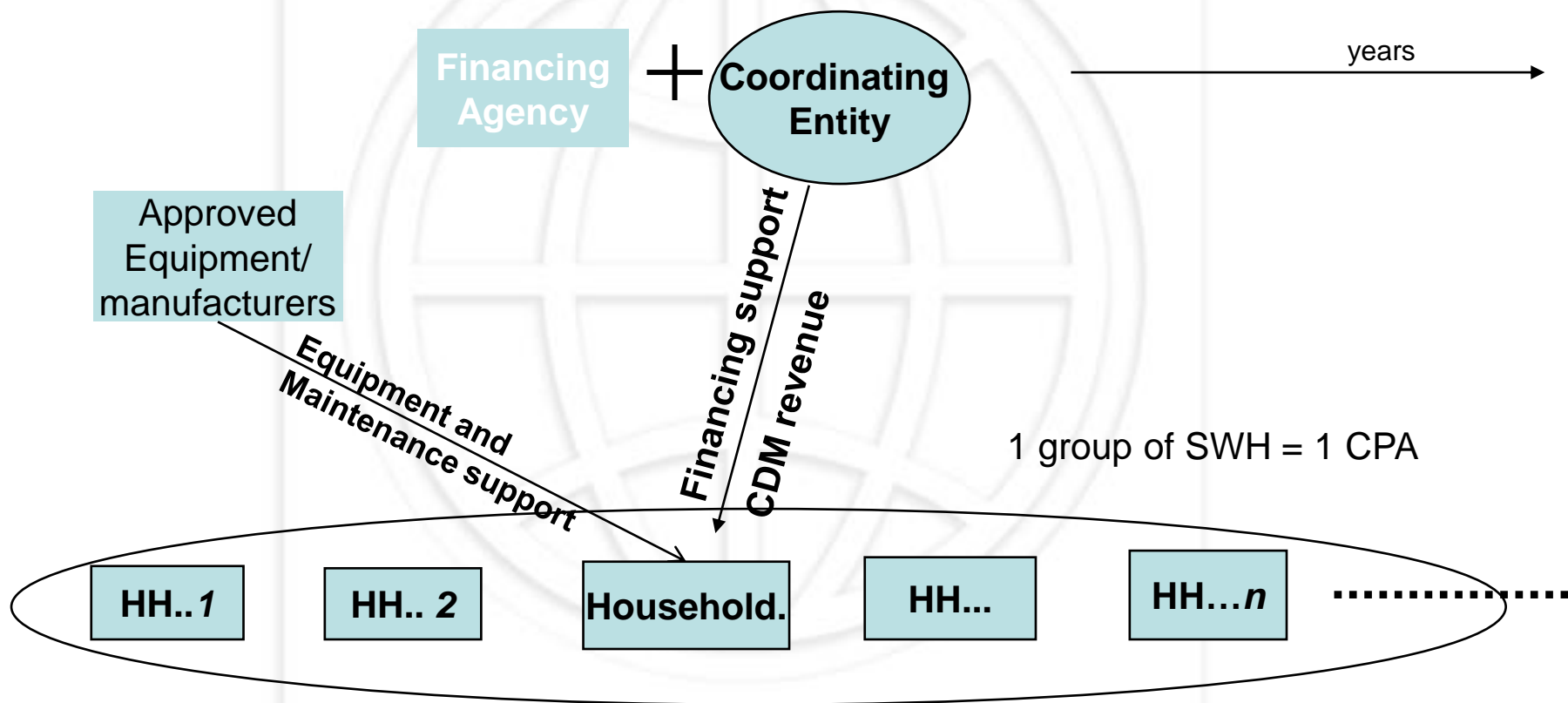


Solar Lighting

- Street-lights, peripheral lights, household applications
- Reduces total electricity demand
- Slightly complex to operate and maintain
- Significant initial investment cost



Residential Solar Water Heater Program





Combining GHG Mitigation Opportunities in Cities





Thank You