



Lima: Ciudad Proactiva con el Clima

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Low Carbon Futures

2050



PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ

Objetivos del proyecto



- ✓ Establecer la justificación económica de las principales inversiones en Lima para:
 - a) Mejorar la eficiencia energética, reducir la huella de carbono (PUCP)
 - b) Mejorar la eficiencia de agua, fortalecer la resiliencia climática (UNALM)

- ✓ Identificar una lista de medidas eficientes de mitigación que puede ser adoptado en Lima, con costos y análisis multi-criterio

- ✓ Desarrollar un plan de implementación y financiamiento para el crecimiento verde y climáticamente inteligente en Lima.

Past National Emissions

Annual greenhouse gas (GHG) emissions for Peru

Query results for Party: Peru - Years: 1990, 1994, 1995, 1996, 2000, 2005 and last year - Category: Total GHG emissions excluding LULUCF/LUCF - Gas: Aggregate GHGs - Unit: G...

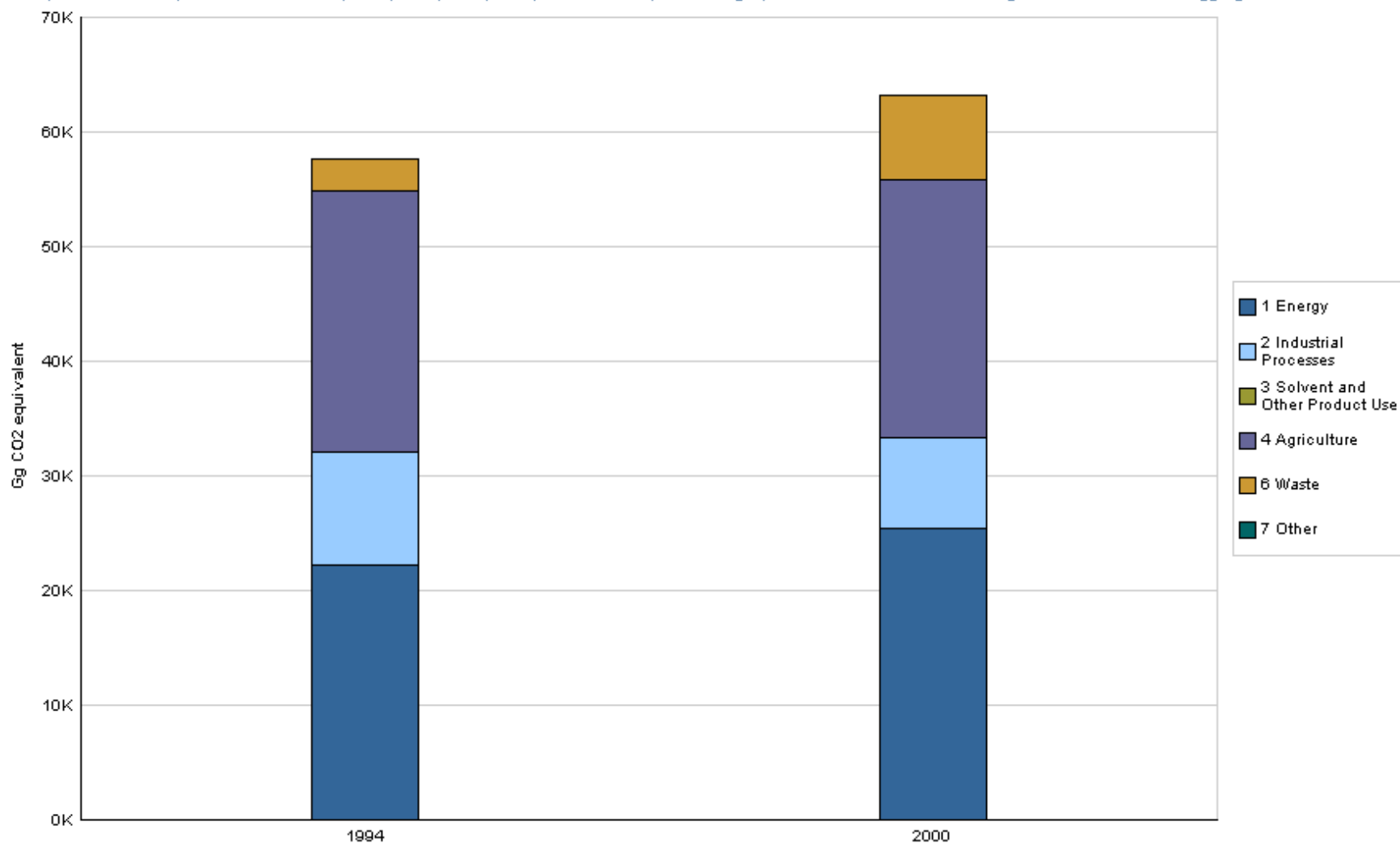
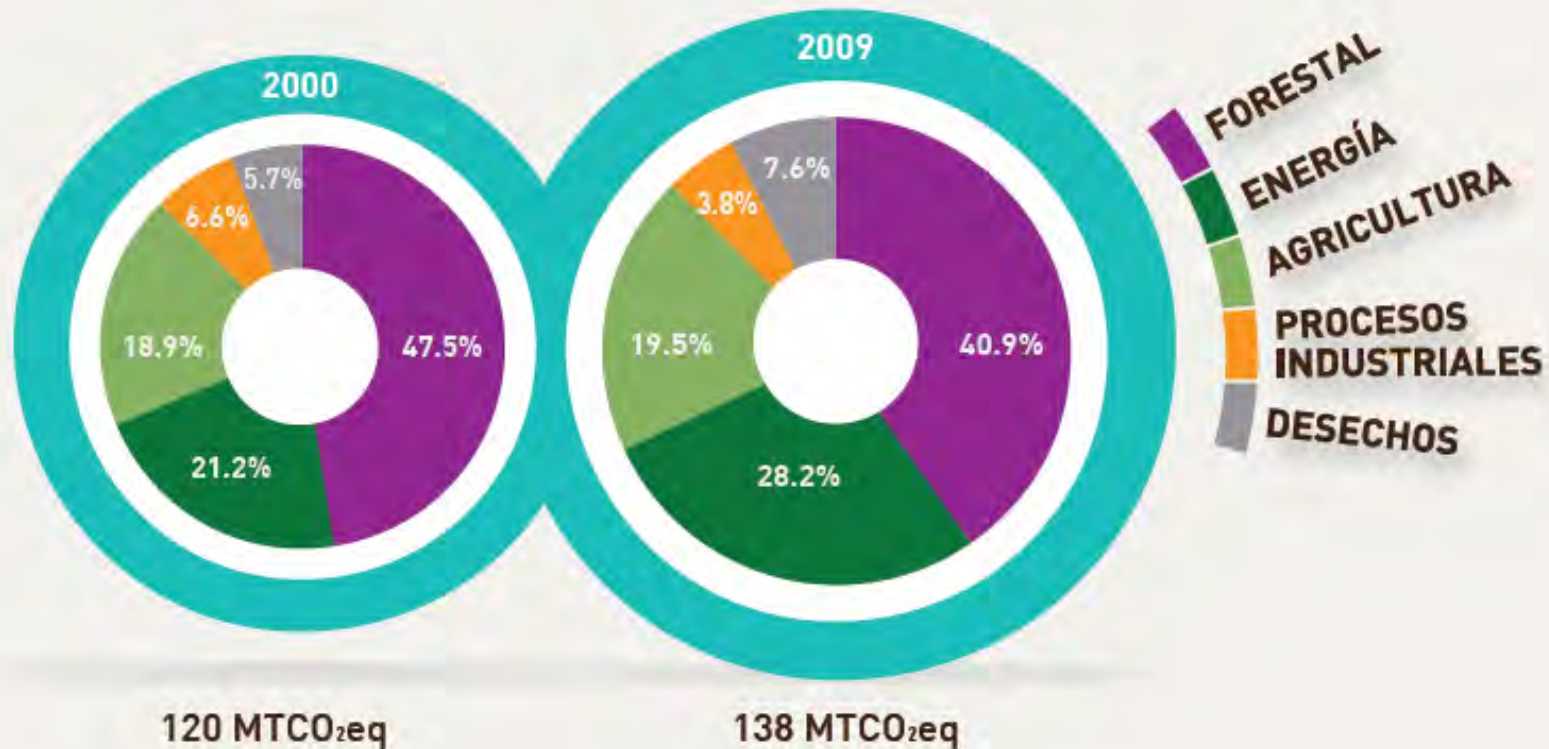


Figura 1. DISTRIBUCIÓN DE EMISIONES DE GEI POR SECTOR
Comparación año 2000 - 2009

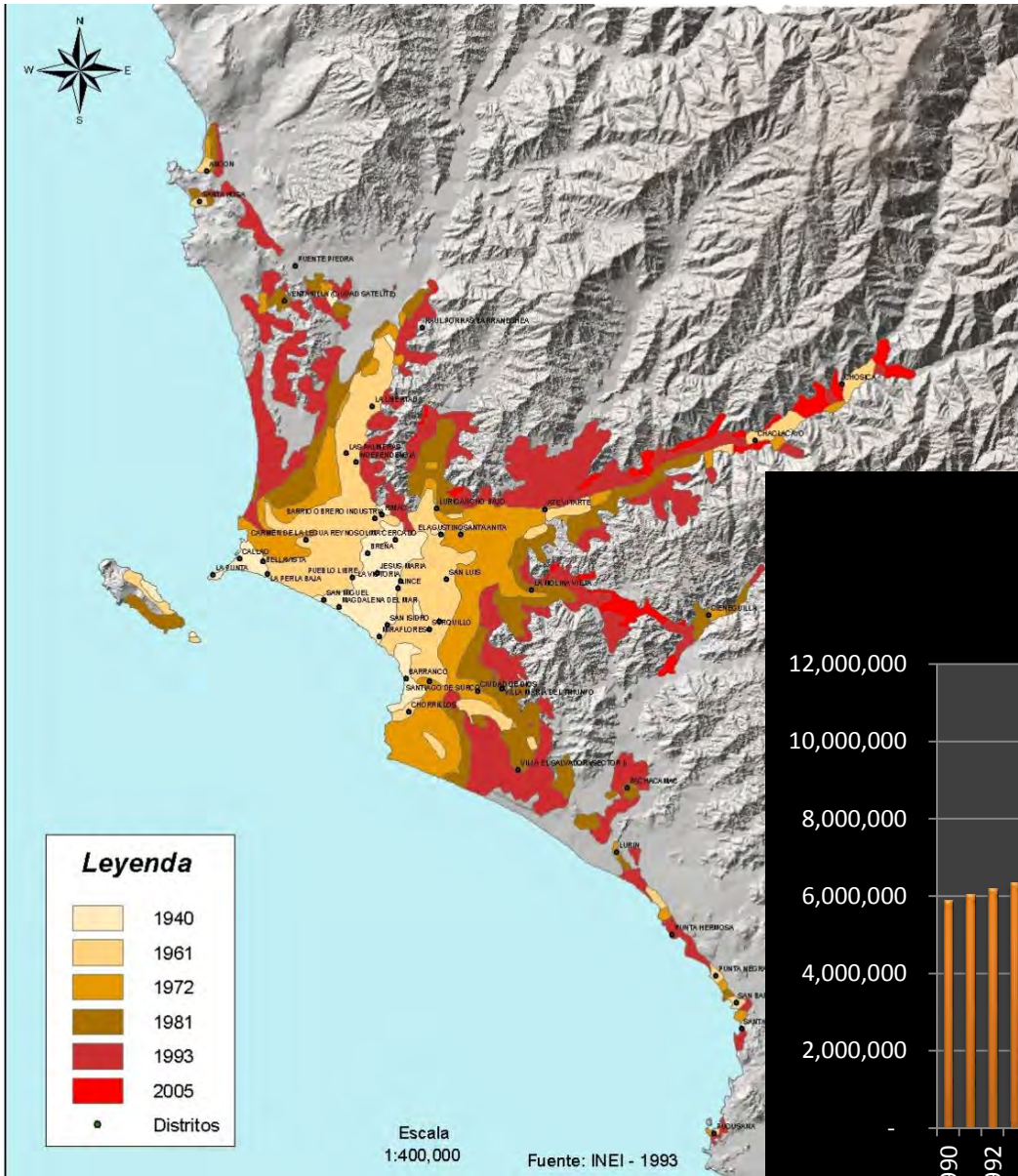


Source: PlanCC

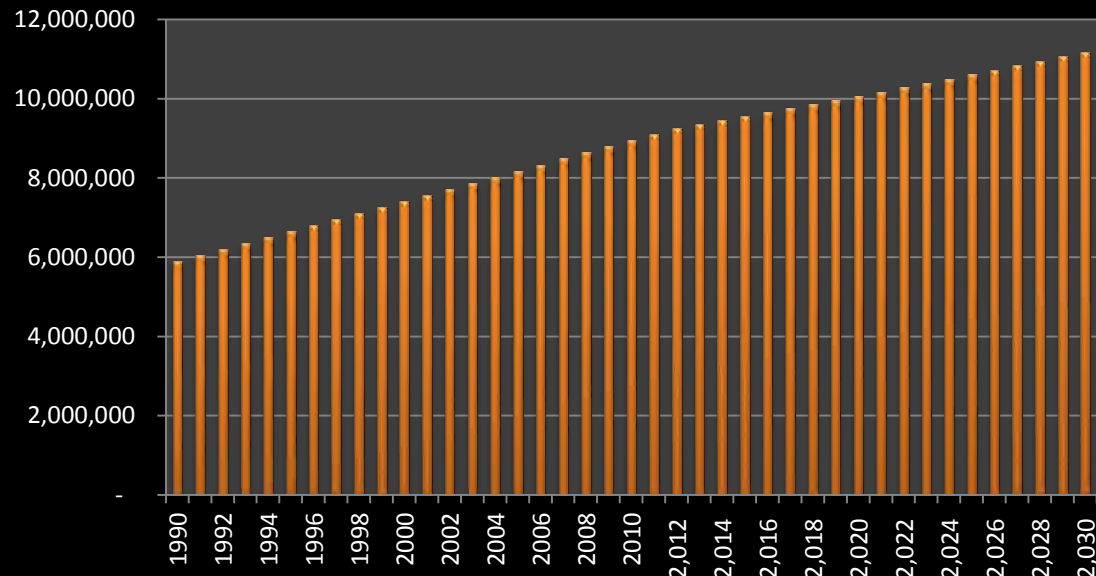
Base line Population, GDP & Emissions

Crecimiento de la ciudad de Lima

- 30% de la población del país
- 50% del PBI nacional
- 68% de la prod. Manufacturera
- 53% de la construcción
- 62% de comercio, rest y hotel
- 84% de recolección impuestos



Lima Metropolitana, 1990-2030: Población



Fuente: www.urbano.org.pe

Fuente: Seminario (2012)
Elaboración propia, usando proyecciones NNUU

Population & GDP



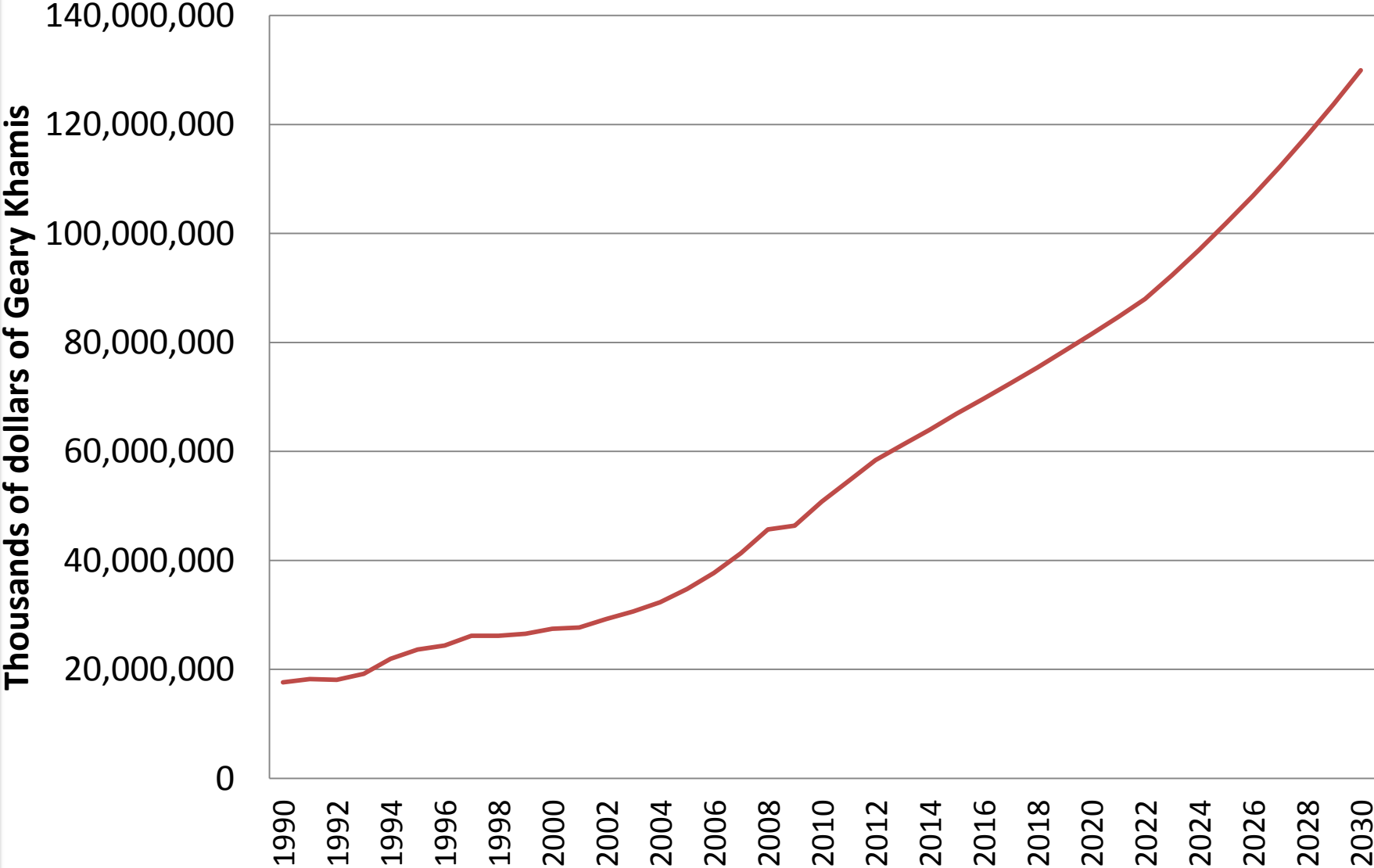
Population likely to reach over 11 million by 2030

- How will the city cope with the population
- What will the impact be on GHG emissions

GDP estimated to rise to 130bn Geary Khamis \$ by 2030 with unrestrained growth

- How can this money be used to support emission reductions?

GDP projection



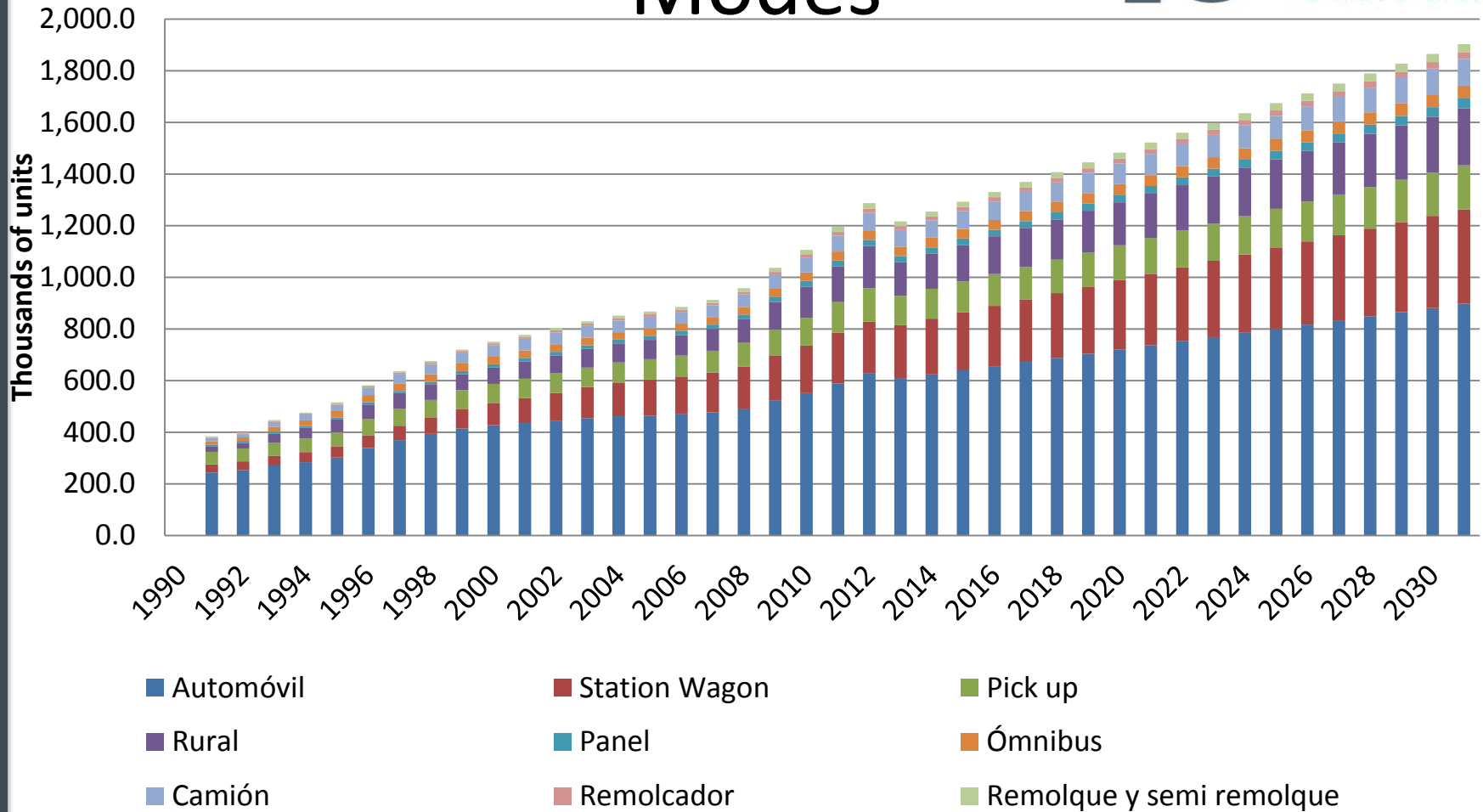
Lima's GHG Baseline



Key sectors we've investigated:

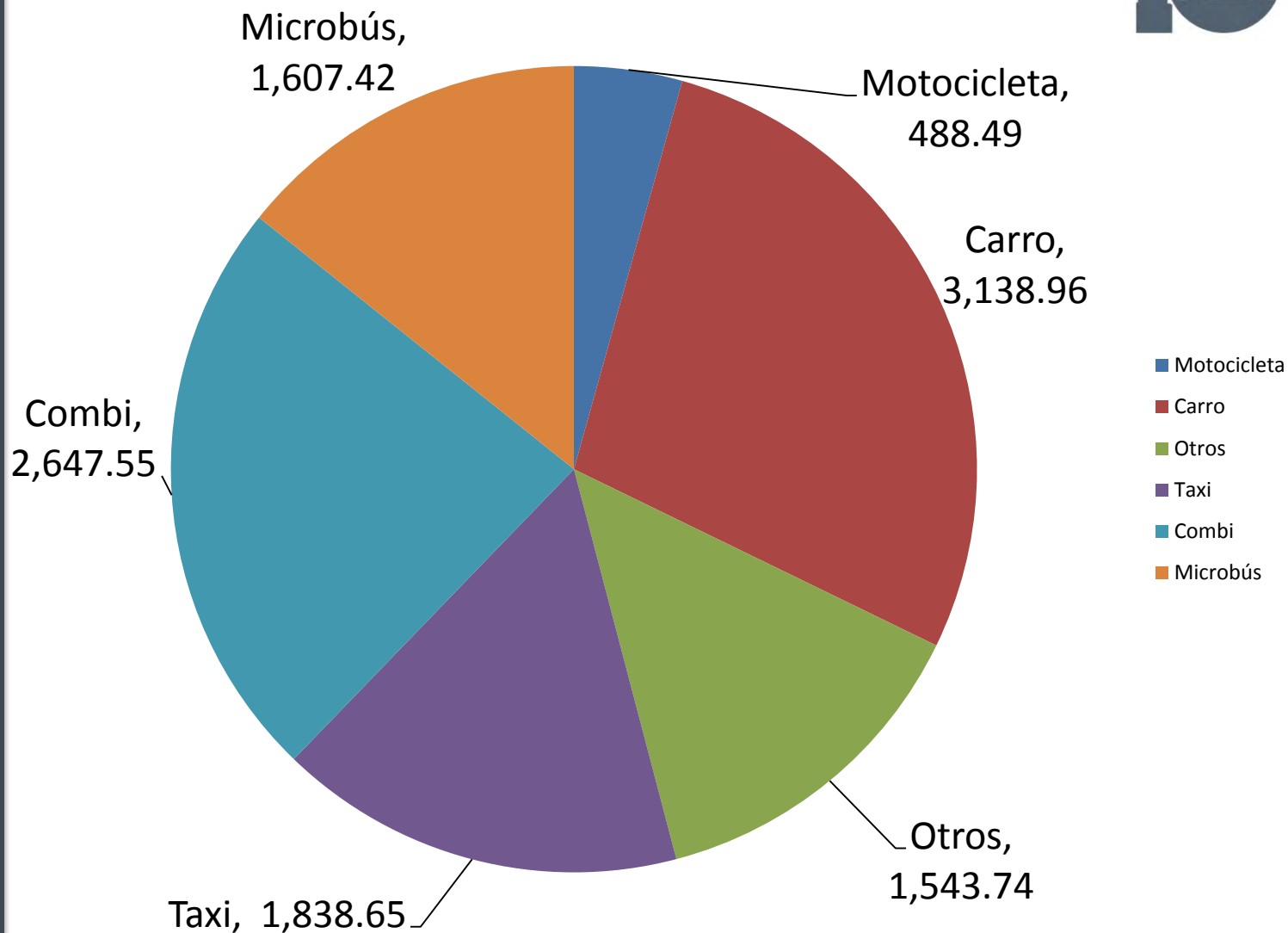
- Electricity generation
- Transport
- Waste
- Industrial
- Commercial
- Residential Buildings

Lima Met. Transport Modes



Sources: Cuanto Peru En Numeros (2002, -2012)

2013 Transport Emissions (ktCO₂e)



Sources: ARAPER, JICA 2004

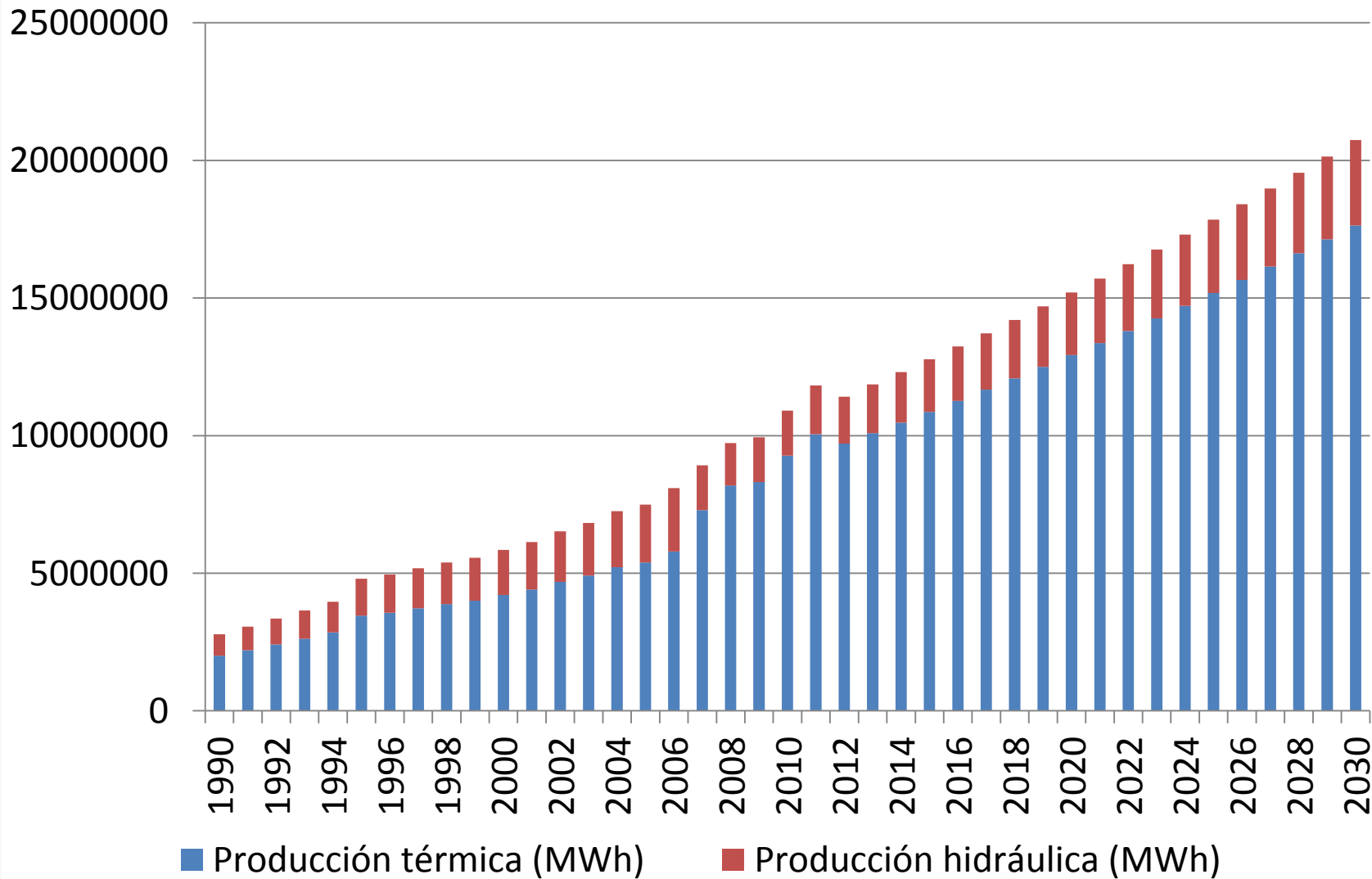
Transport



Key Findings to Date:

- Transport key part of Peru and Lima's emissions
- Transport emissions rising rapidly – presumably can't continue at this rate – gridlock!
- Large proportion from cars and combi

Energy Supply by Type (MWh)



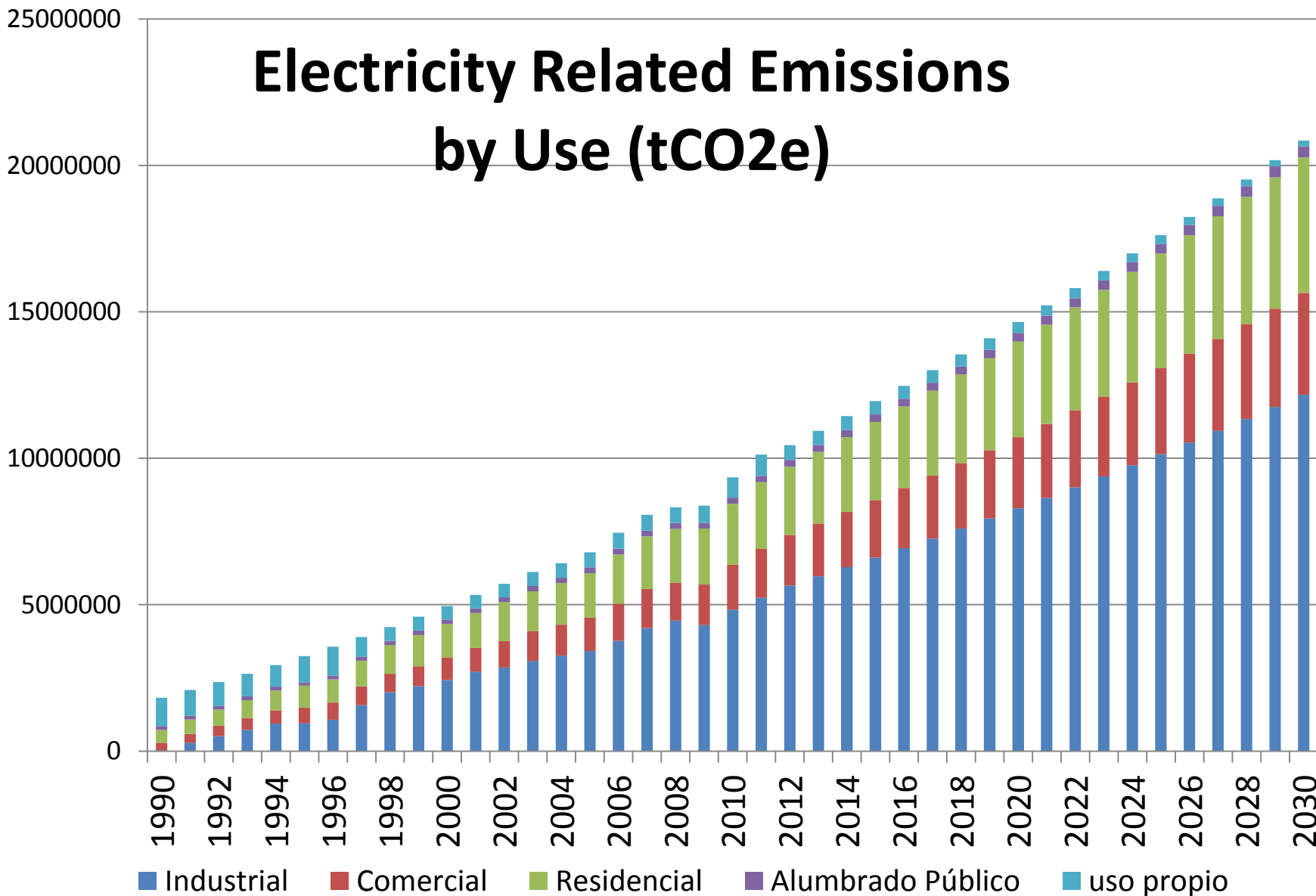
Source: MINEM

Energy Supply



- Mainly thermal (diesel, coal and gas) and hydroelectric
- Can hydroelectric be relied on long-term?
- Gas becoming increasingly large component of electricity generation – higher emissions

Electricity Related Emissions by Use (tCO2e)



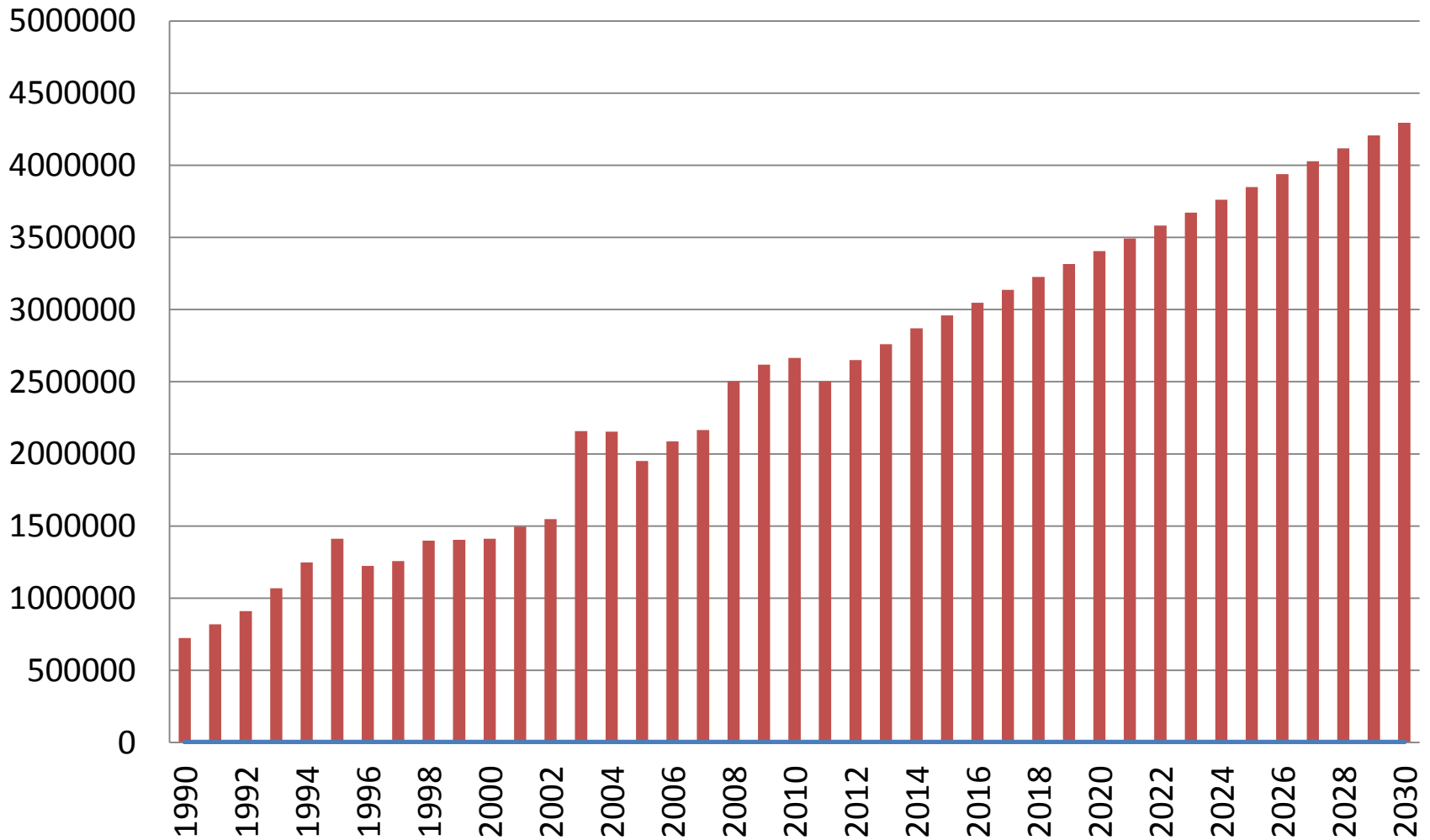
Source: MINEM

Energy Use Emissions



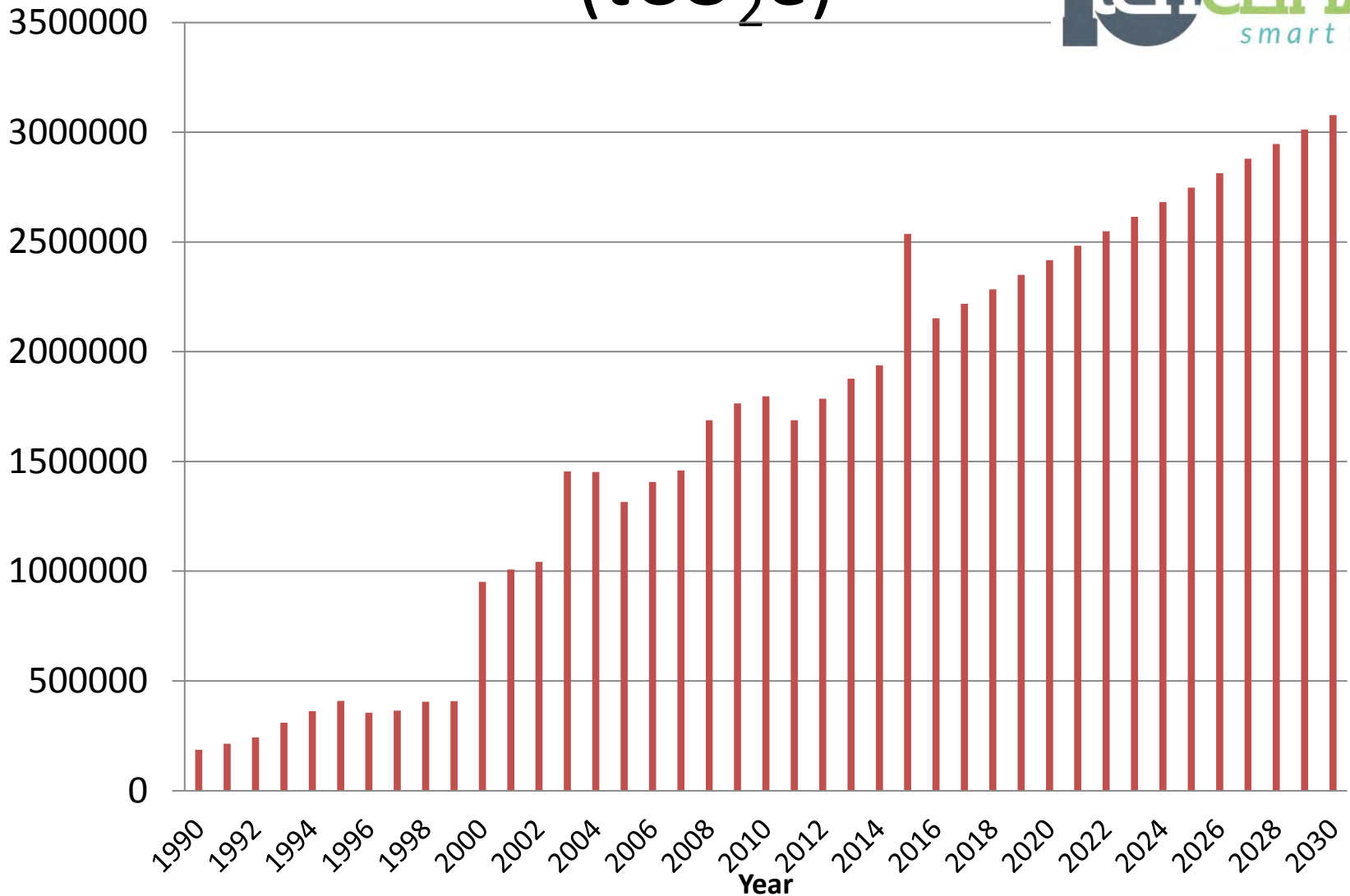
- Increasing rapidly, largest portion industrial, followed by residential and commercial
- Industry numbers increasing rapidly:
 - 2000 Lima 877, Callao 128
 - 2007 Lima 49675, Callao 3193

Solid Waste Generated (t)



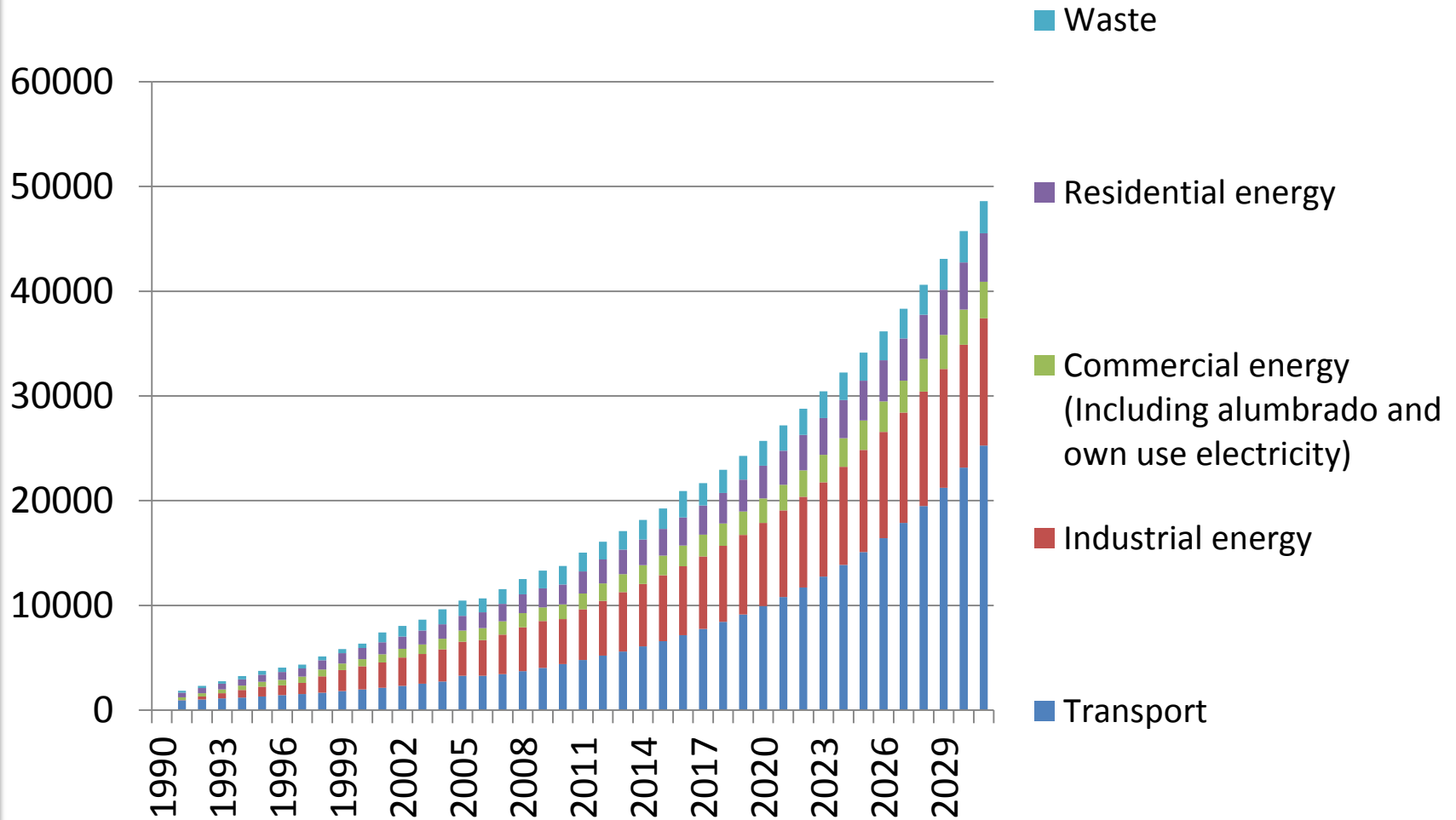
Source: Municipality of Lima, Cuanto

Waste Emissions (tCO₂e)



Source: Municipality of Lima, Cuanto

Lima Emissions Baseline (KtCO₂e)



Source: Municipality of Lima, Cuanto, MINEM, ARAPER, JICA

Key Findings



- If allowed to continue to rise GHG emissions could be 9.8 times 1990 levels and 2.7 times 2013 estimates by 2030
- Transport is a key component of GHG emissions in Lima, with cars being a key element
- The electricity system is likely to become increasingly carbonised as hydro-electric options reduce and impact of climate change on these remains unclear
- Industrial energy use is a large component of electricity use and therefore presents opportunity for mitigation

Project Schedule

- July to September - baseline development
- October to December - options appraisal
- January - aggregation and multi-criteria evaluation
- February - report writing, design, preparation
- March - report launch, financing and implementation workshop, industry and policy roundtables

Gracias!