



DRAFT 4/3/2018

CAP 2.0 Climate Action Committee – Menu of Actions Review

City of Sunnyvale

Ben Butterworth, DNV GL

4/5/18

Agenda

1. Sunnyvale's Emissions Reduction Targets
2. Review Clean Electricity Actions
3. Review Decarbonizing Buildings Actions
4. Review Reducing Consumption/Waste Actions
5. Review Conserving Water Actions
6. Review TrendLab+ Transportation Trends

This meeting is meant:

- **To Inform** the CAC on potential strategies and actions
- **To get input** from the CAC on said strategies and actions

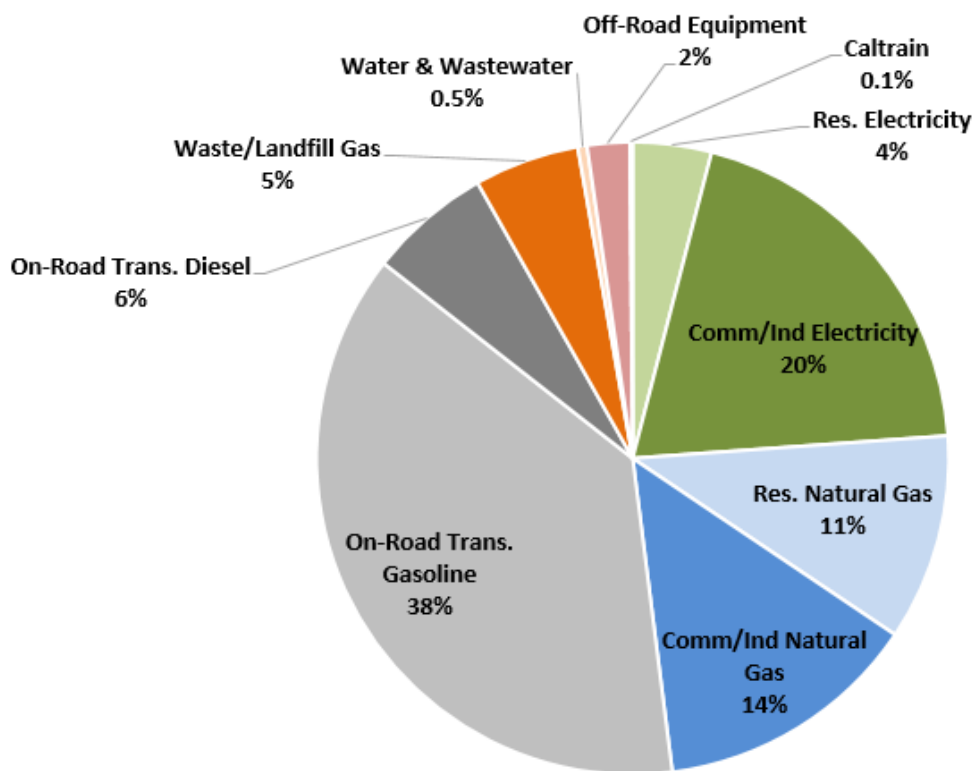
Timeline

- Dec: Key Focus Areas
- Jan: Review of CAC Brainstorm
- Feb: Draft Workshop
- Mar: Sunnyvale Community Workshop
- Apr: Menu of Actions + Transportation Trends Review (CAC)
- Apr – May: Draft scenario analysis by DNV-GL + F&P
- May: Review draft scenarios (CAC)
- Jun: Review Platform Ideas (CAC)
- Jun – Aug: Drafting of CAP 2.0 Framework by DNV-GL
- Aug: TBD (CAC)
- Sep: Draft CAP 2.0 framework Review (CAC)
- Dec: CAP 2.0 to Council

Sunnyvale's Emissions Reduction Targets

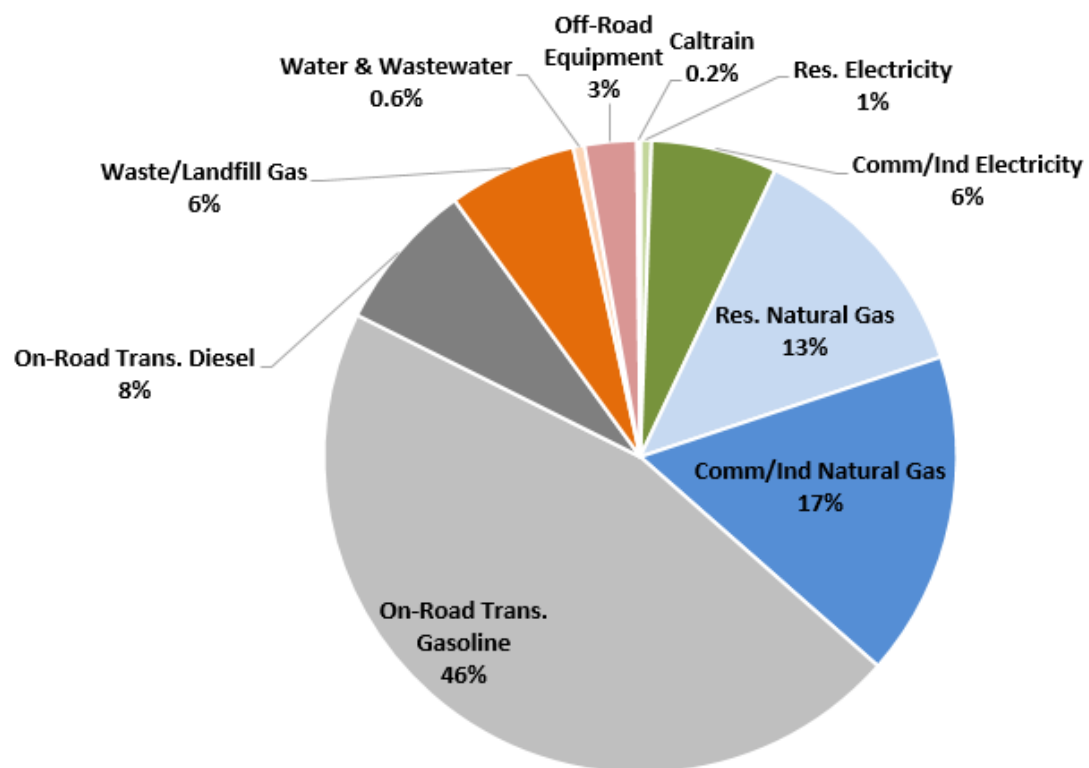
2016 Sunnyvale GHG Emissions - DRAFT

2016 Inventory



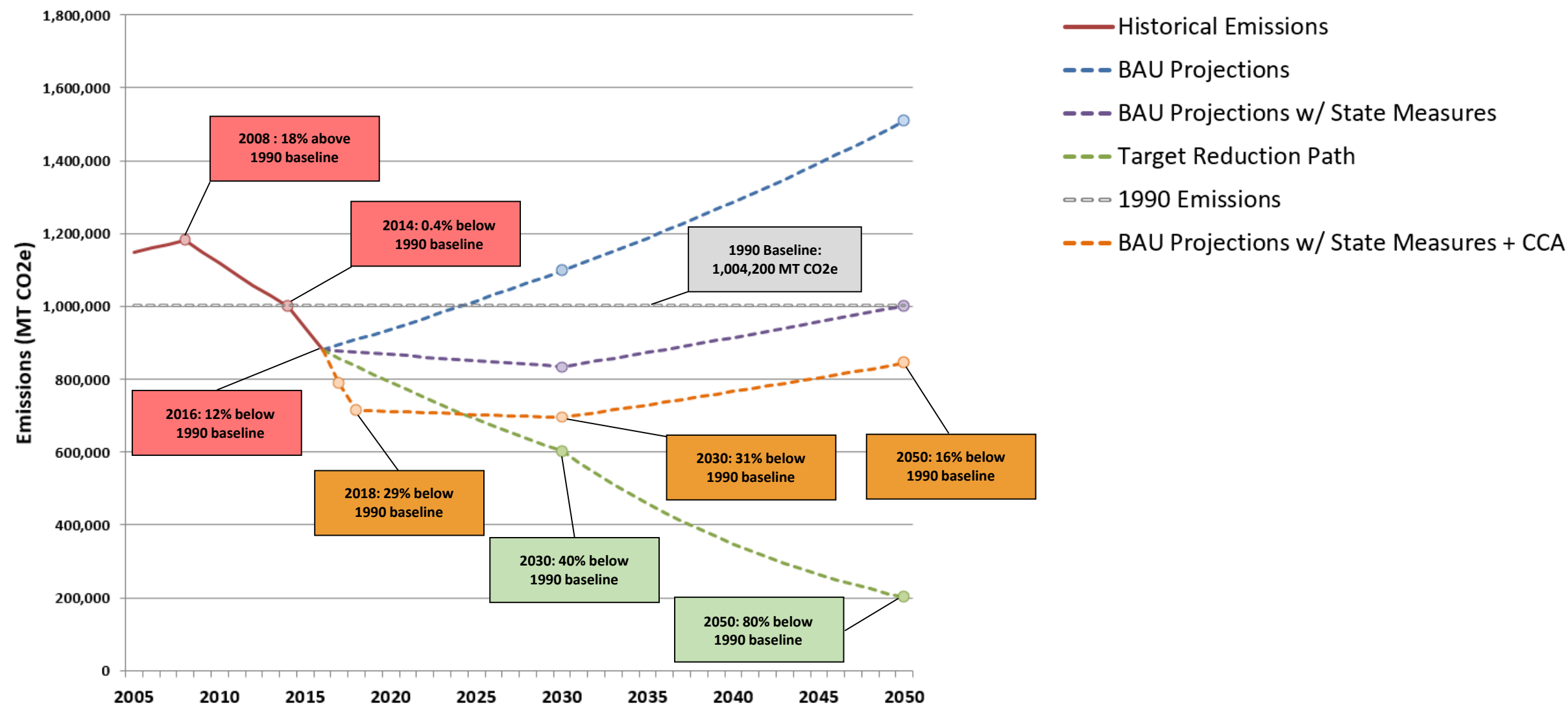
24% of emissions from Natural Gas
24% of emissions from Electricity
44% of emissions from On-road Transportation

2016 Inventory with SVCE Lens



29% of emissions from Natural Gas
7% of emissions from Electricity
54% of emissions from On-road Transportation

Sunnyvale GHG Emissions Forecast



Key Focus Areas

Key Focus Areas



Clean Electricity



Sustainable Land Use



Decarbonizing Buildings



Reducing Consumption & Waste



Decarbonizing Transportation

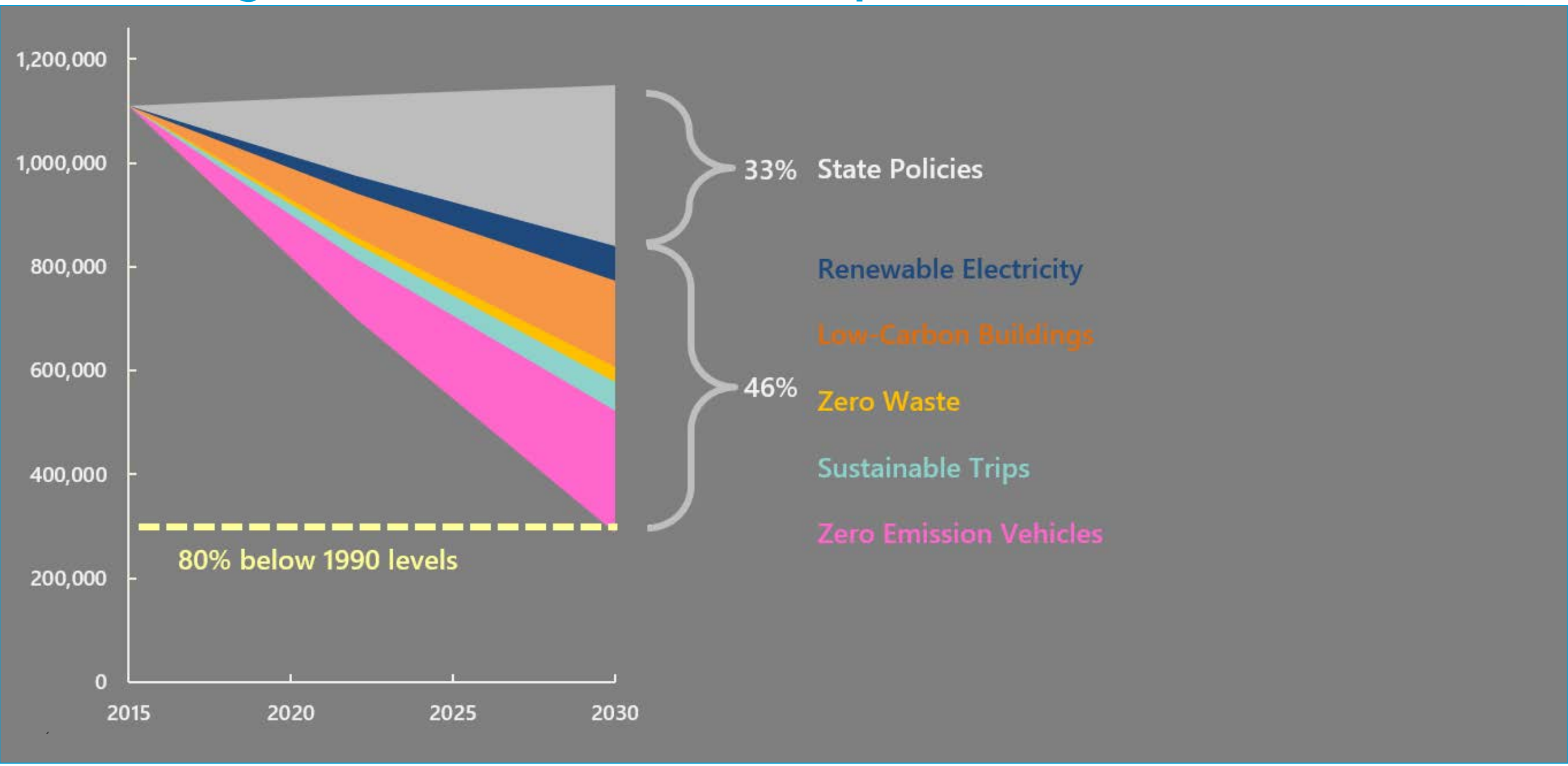


Conserving Water



**Engaging the Community
Through Information and
Outreach**

The Wedge Tool: Santa Monica Example



What Leading Cities Are Doing

What Cities Can Do

1 Lead by Example



Vancouver

Net Zero Standards for Municipal Buildings



Seattle

Vehicle Electrification

2 Incentivize Action



Melbourne

Building Energy Efficiency Incentives



Chicago

EV Purchase Subsidies

3 Require Results



Brussels

Passive House Standards & Subsidies



Milan

Low Emission Zone and Congestion Charge

4 Mandate Action



Austin

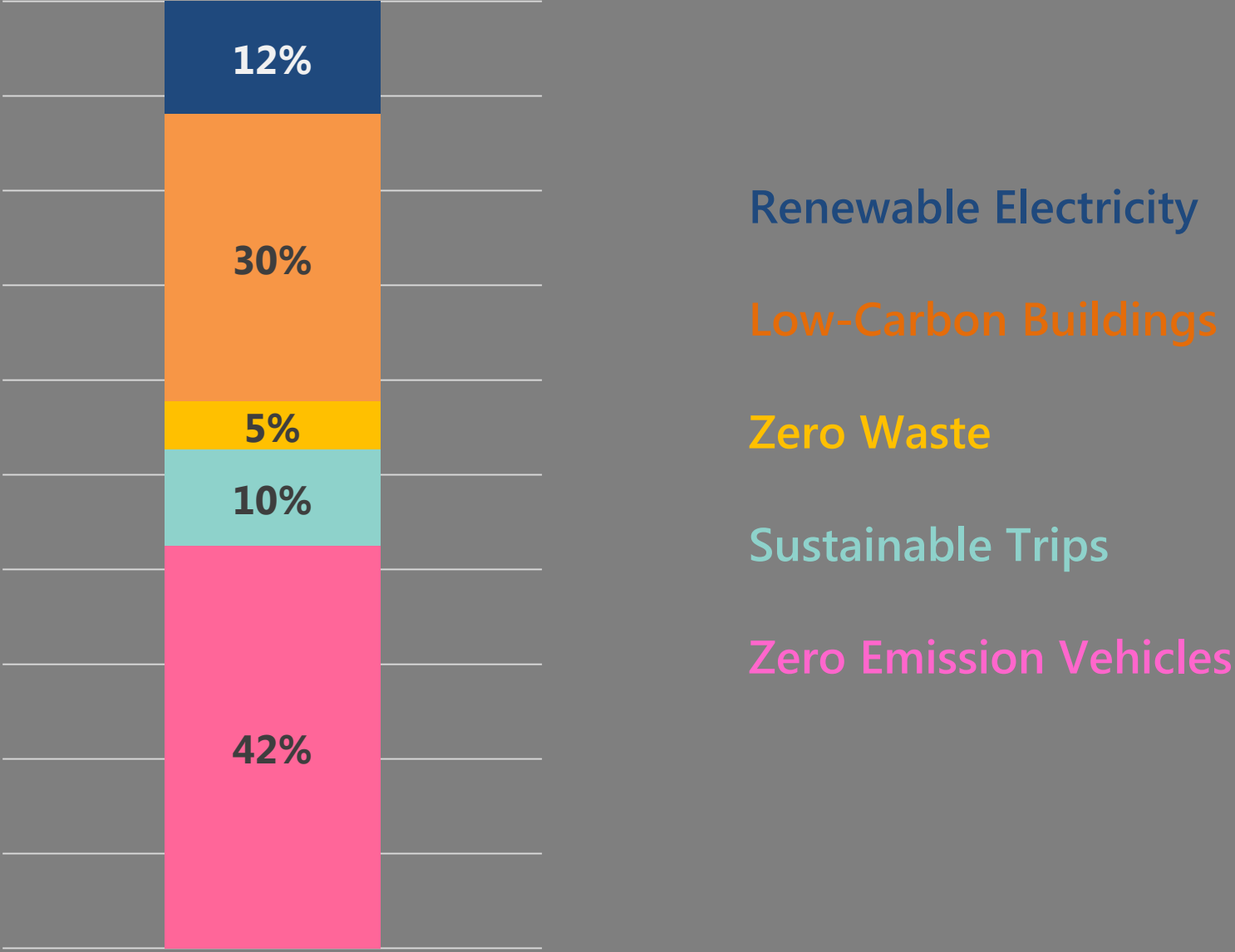
Point-of-Sale Energy Audits



Nottingham

Workplace Parking Levy

Wedges: Santa Monica Estimated Reduction by Sector



Terminology!

- **Example Key Focus Area:** Decarbonizing Buildings
- **Example Strategy:** Reduce Residential Natural Gas Consumption 30% below 2016 levels by 2030
- **Example Action:** Partner with SVCE to offer incentivizes for electrification of natural gas hot water heaters







Goal: 100% Renewable Energy

100% renewable electricity with 20% generated from local sources

Estimated 2030
GHG reductions

73,449 mtCO₂e
12% of total reduction

Santa Monica CAP Example

Actions	Impact	Co-Benefits
Implement a Community Choice Aggregation (CCA) Program		
Adopt a Sustainable Energy Master Plan		
Pilot and Promote Advanced & Innovative Energy Technologies		



GHG Reduction
Potential



Enhances
Community
Resilience



Supports Local
Economy & Jobs



Improves
Public Health



Improves Local
Environment











































Promotes
Equity

Efficient Low-Carbon Buildings

50% reduction in total building energy use
20% reduction in fossil fuel use in existing buildings
100% new buildings are carbon-free

Estimated 2030 GHG reductions	159,667 mtCO2e 30% of total reduction
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Santa Monica CAP Example

Actions	Impact	Co-Benefits
Convert Natural Gas Appliances to Electric	    	    
Adopt an Electrify Upon Sale Ordinance	    	    
Adopt Ordinance for Zero Net Energy Construction for Multi-Family and Commercial	    	    
Adopt Ordinance for Carbon Neutral Construction for Single-Family Residential	    	    



GHG Reduction Potential



Enhances Community Resilience



Supports Local Economy & Jobs



Improves Public Health



Improves Local Environment



Promotes Equity

Draft Actions for Discussion

Clean Electricity

Key Focus Area: Clean Electricity

Sample Strategy-Level Goal: 100% Clean Electricity by 2030

Clean Electricity Example Actions for Discussion

- Partner with SVCE to drive increased participation in 100% renewable GreenPrime service offering
- Targeted outreach to large direct access customers to shift towards 100% renewable electricity
- Local renewable energy – promote & incentivize local solar (plus efficiency, storage, electric systems)
- Pilot new technologies (microgrids, etc.) in muni facilities
- Require solar – new construction



Decarbonizing Buildings

Key Focus Area : Decarbonized Buildings

Sample Strategy-Level Goal: 20% Fossil Fuel Free in Existing Buildings, 100% Fossil Fuel Free in New Construction by 2030

Decarbonizing Buildings Example Actions for Discussion

- Energy Benchmarking and Retrofit Policy and programs for Existing Buildings
- Green Lease Program ordinance for commercial buildings
- Electrification program – Heat pump water and space heaters
- ZNE NEW Construction Policy– Residential 2020; Commercial 2030 or sooner
- ZNE + All Electric Incentives and Recognition program
- Municipal facility ZNE leadership by example
- Improve permit process and ordinance requirements



Private and confidential

Reducing Consumption & Waste

Key Focus Area: Reducing Consumption & Waste

Sample Strategy-Level Goal: Divert 95% of Waste from Landfills by 2030

Reducing Consumption/Waste Example Actions for Discussion

- Waste Audits, education and outreach
- Pricing increases/fees for not recycling and composting
- Promote Reuse/repair and circular economy program
- Construction and demolition debris diversion ordinance
- Local Food program promotion
- Multi-family program for composting, gardens
- Single-use plastics ban



Conserving Water

Conserving Water Example Actions for Discussion

- Water neutrality ordinance for new construction
- Implement City's Green Infrastructure Plan
- Increased promotion of existing SCVWD efficiency/conservation rebates (landscapes, graywater)
- Provide supplemental funding to existing SCVWD efficiency/conservation rebates
- Adoption of CALGreen Tier 1 or Tier 2 reach codes for indoor and outdoor water use in new construction



SUSTAINABLE BUILDINGS AND COMMUNITIES , DNV-GL

End of Presentation

Send feedback to Nupur Hiremath