



Volkswagen (VW) Trust

Trust Advisory Committee

Jan. 22, 2018
Jefferson City, Mo.



Today's Discussion

- Eligibility criteria for projects
- Equipment potentially eligible
- Emission reduction and cost
- Results of second survey

Reminder: Eligible Mitigation Actions

- 1. Large trucks (class 8)**
- 2. School, shuttle and transit buses**
- 3. Locomotives**
- 4. Ferries/tugboats**
- 5. Marine shorepower**
- 6. Medium trucks (classes 4-7)**
- 7. Equipment for servicing aircraft**
- 8. Forklifts and cargo-handling equipment**
9. Charging stations for electric vehicles
10. Option involving U.S. Diesel Emission Reduction Act

Upcoming slides will focus on inventories that fall under bolded categories

Criteria: Large and Medium Trucks

Large Trucks

- * Class 8
- ≥ 33,000 pounds

Medium Trucks

- * Classes 4-7
- * 14,000 – 33,000 pounds

- Eligible model years for repowers or replacements: 1992-2009
- Model year of replacement vehicle or engine: same year as when replacement occurs or one year prior
- Fuel options for repowers or replacements: diesel, alternative fuel or 100 percent electric

Criteria: School, Transit or Shuttle Buses

- Classes: 4-8
- Eligible model years for repowers or replacements: 2009 or older
- Model year of replacement vehicle or engine: same year as when replacement occurs or one year prior
- Fuel options for repowers or replacements: diesel, alternative fuel or 100 percent electric

Criteria: Locomotive Freight Switchers

- Eligible engines: pre-Tier 4 engine
- Requirement: operate more than 1,000 hours per year
- Requirement: new engine must meet EPA standard for the year in which repower or replacement occurs
- Fuel options for repowers or replacements: diesel, alternative fuel or 100 percent electric

Criteria: Ferries and Tugboats

- Restriction: only repowers permitted
- Engine to be replaced: unregulated, Tier 1 or Tier 2 marine engine
- New engine: Tier 3 or Tier 4
- Fuel options for new engine: diesel, alternative fuel or 100 percent electric
- Other possibilities: EPA-certified remanufactured system or EPA-verified engine upgrade

Criteria: Ground Support for Airports

- Restriction: only vehicles and equipment servicing aircraft between flights
- Requirement:
 - Tier 0, 1 or 2 diesel equipment
 - Uncertified, or certified to 3 g/bhp-hr or higher, spark-ignited engine
- Fuel for repower or replacement: only 100 percent electric

Criteria: Forklifts and Cargo Handlers

- Restriction: forklifts with greater than 8,000 pounds of lift capacity
- Fuel for repower or replacement: only 100 percent electric



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Equipment Inventory

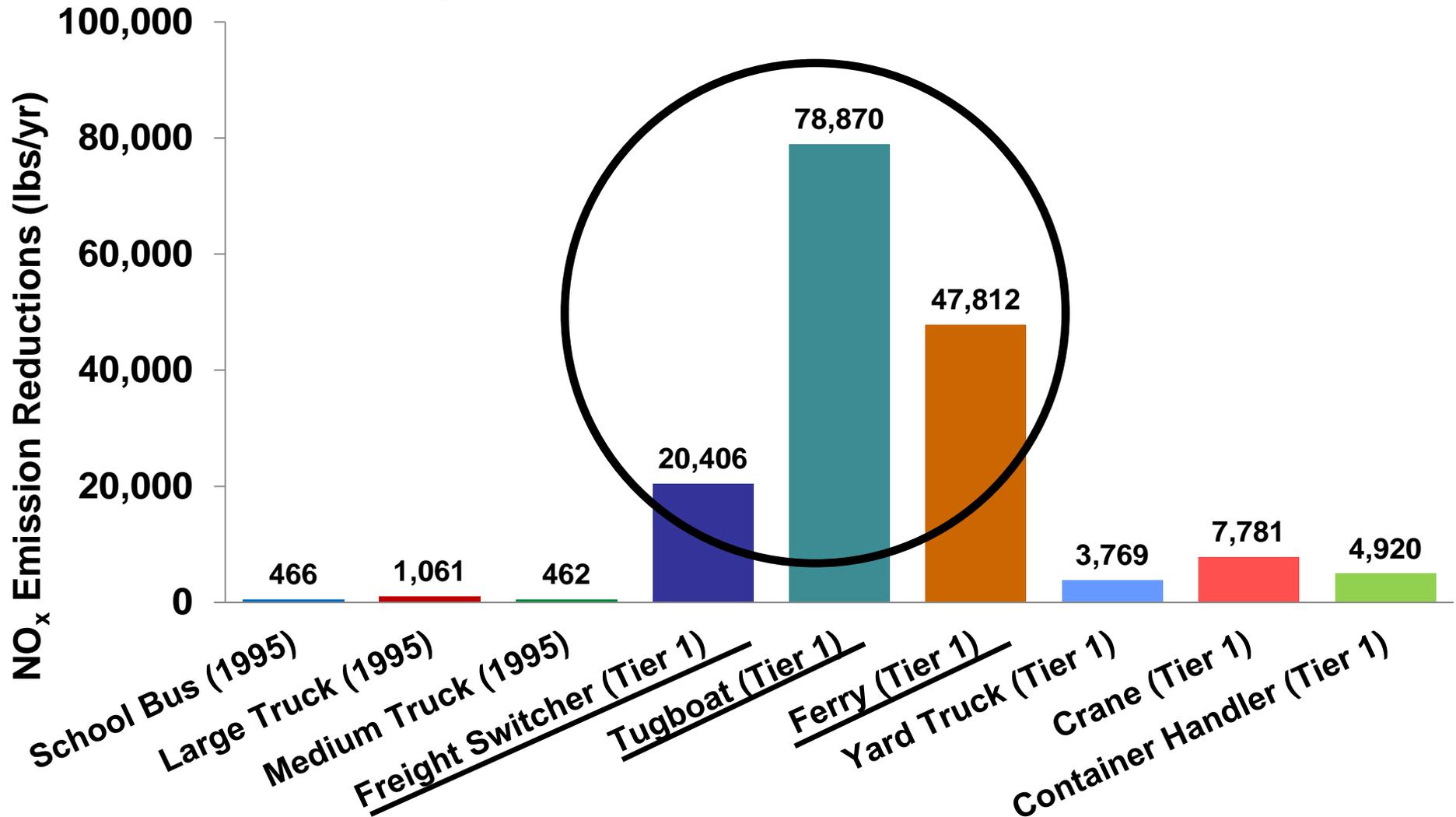
Category	Missouri Equipment Totals	Source of Data	Eligibility
Large and Medium Trucks	188,000 total trucks	MoDNR estimate	115,000 trucks
	1,500 state-owned trucks	State database; does not include city or county trucks	1,400 trucks
Locomotives	90 freight switchers	MoDNR estimate	Unknown
Ferry/Tugboats	220 ferries/tugboats	MoDOT estimate	Unknown
Buses <small>Numbers shown in red for school buses are figures MoDNR corrected after Jan. 22, 2018, meeting</small>	12,000 school buses	State database	6,000 school buses
	840 transit buses	Federal Transit Authority, 2016	unknown
Forklifts	17,000 forklifts	MoDNR estimate	unknown
Airport Equipment	900 pieces of equipment	MoDNR estimate	unknown

School Bus Inventory

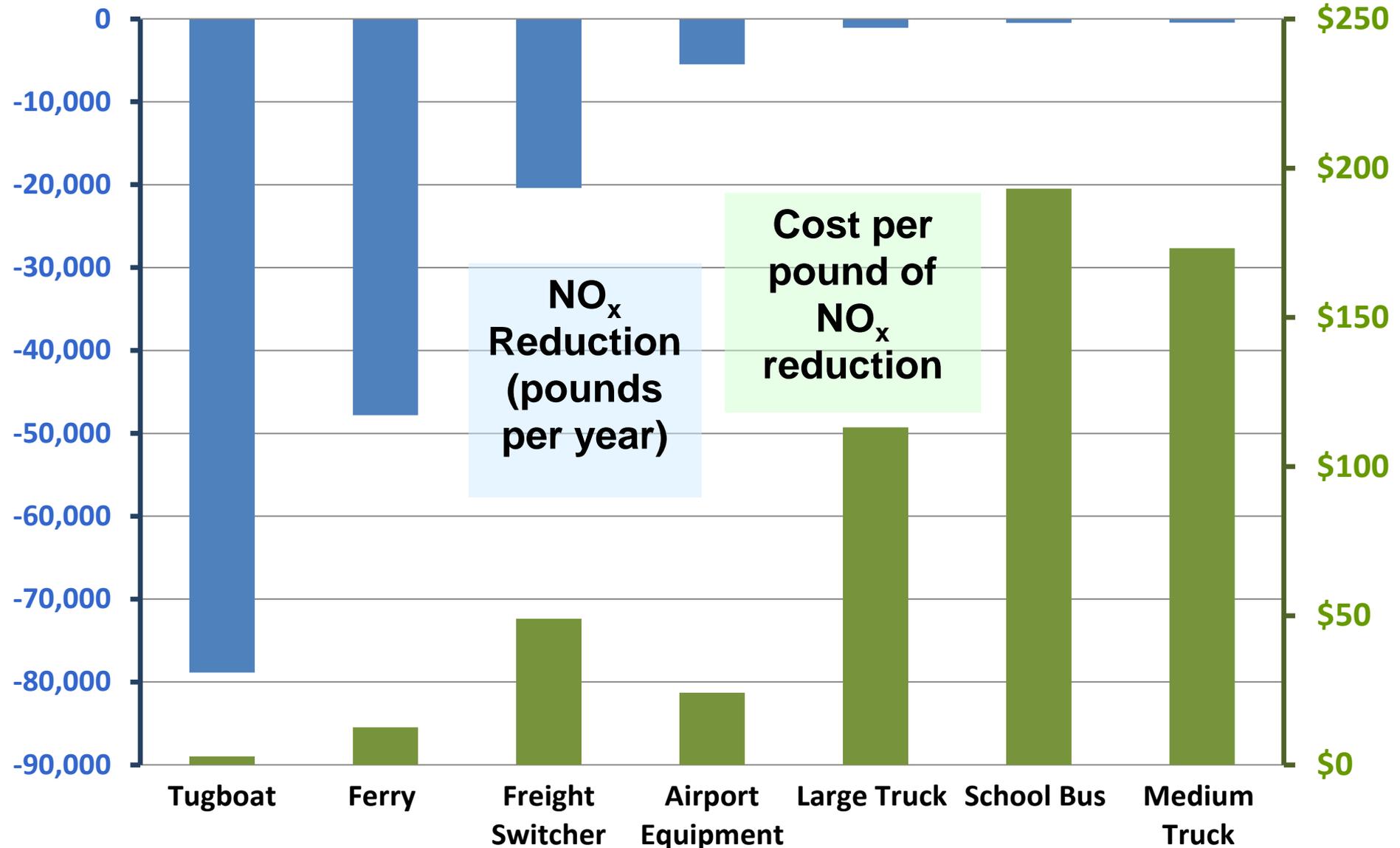
- Out of 596 school districts in the state, 565 have at least one eligible school bus
 - Average model year of all buses: 2008
 - Average model year of VW-eligible buses: 2005
- Tailpipe standards changed in 2004, and there are many older buses
 - 1,700 buses older than 2004
- * Average cost of a new bus: \$90,000

Emission Reduction and Cost

Reducing Emissions: Replacing Old Diesel Engines with New Ones

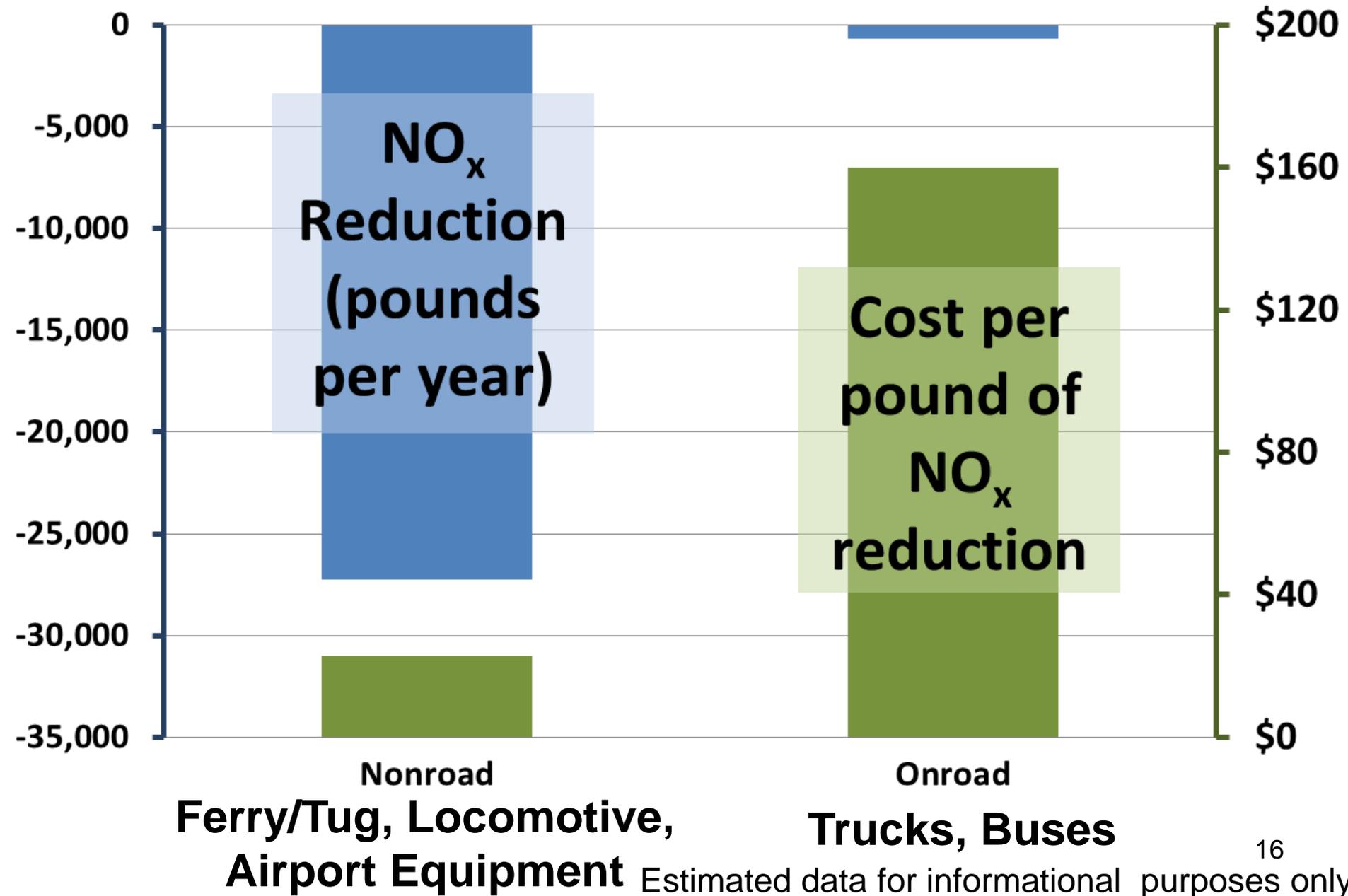


NO_x Reduction vs. Cost per Pound



Estimated data for informational purposes only

NO_x Reduction vs. Cost per Pound



Reminder:

Beneficiary Mitigation Plan Elements

Mitigation Plan Must Include:

- Overall goal for using funds
- Percentage of funds for each project category included in plan
- Consideration of air quality benefits in areas with disproportionate air pollution burdens
- Estimation of emission benefits for project categories included in plan

Possible plan considerations:

Note: The consent decree does not require these considerations

- Process and timing for selecting projects
- Preferred fuel types for new vehicles and/or engines



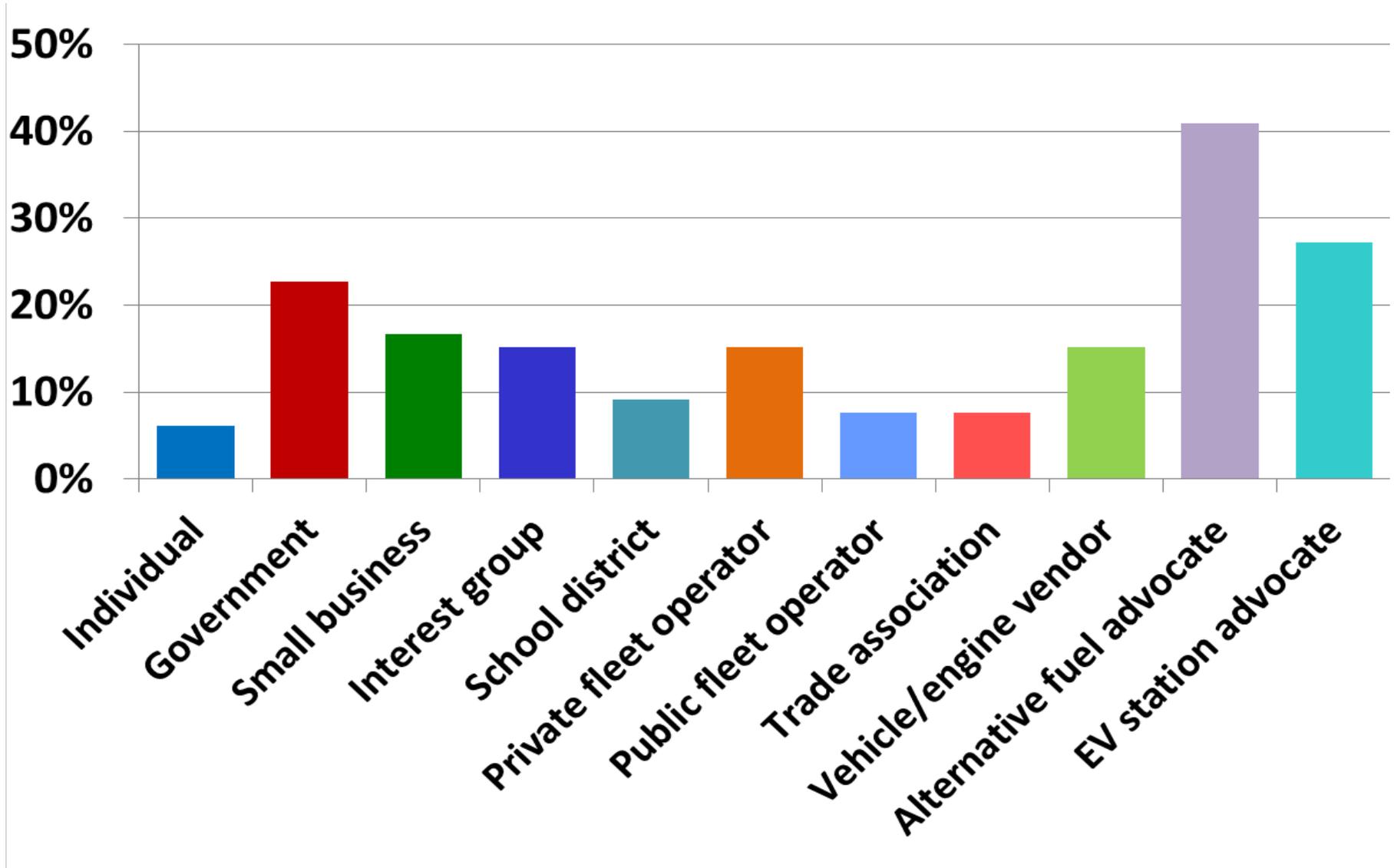
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Survey #2 Results

Second VW Survey

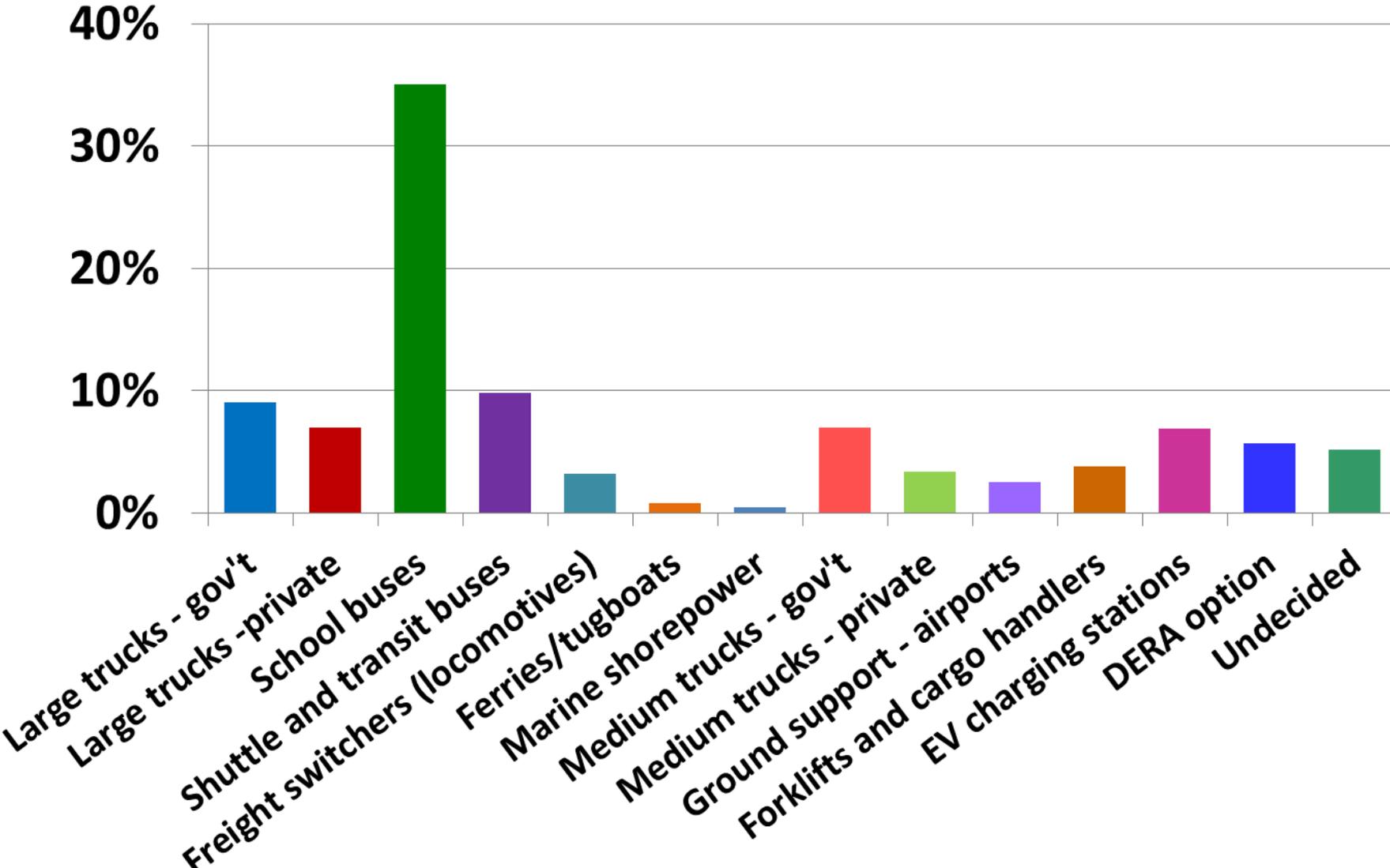
- Distribution: VW Trust Advisory Committee plus those who requested the survey
- When: mid-January 2018
- Deadline: Jan. 16, 2018
- Participation: about 75 percent of the advisory committee responded
- Material: detailed decision items

Survey Respondents by Affiliation

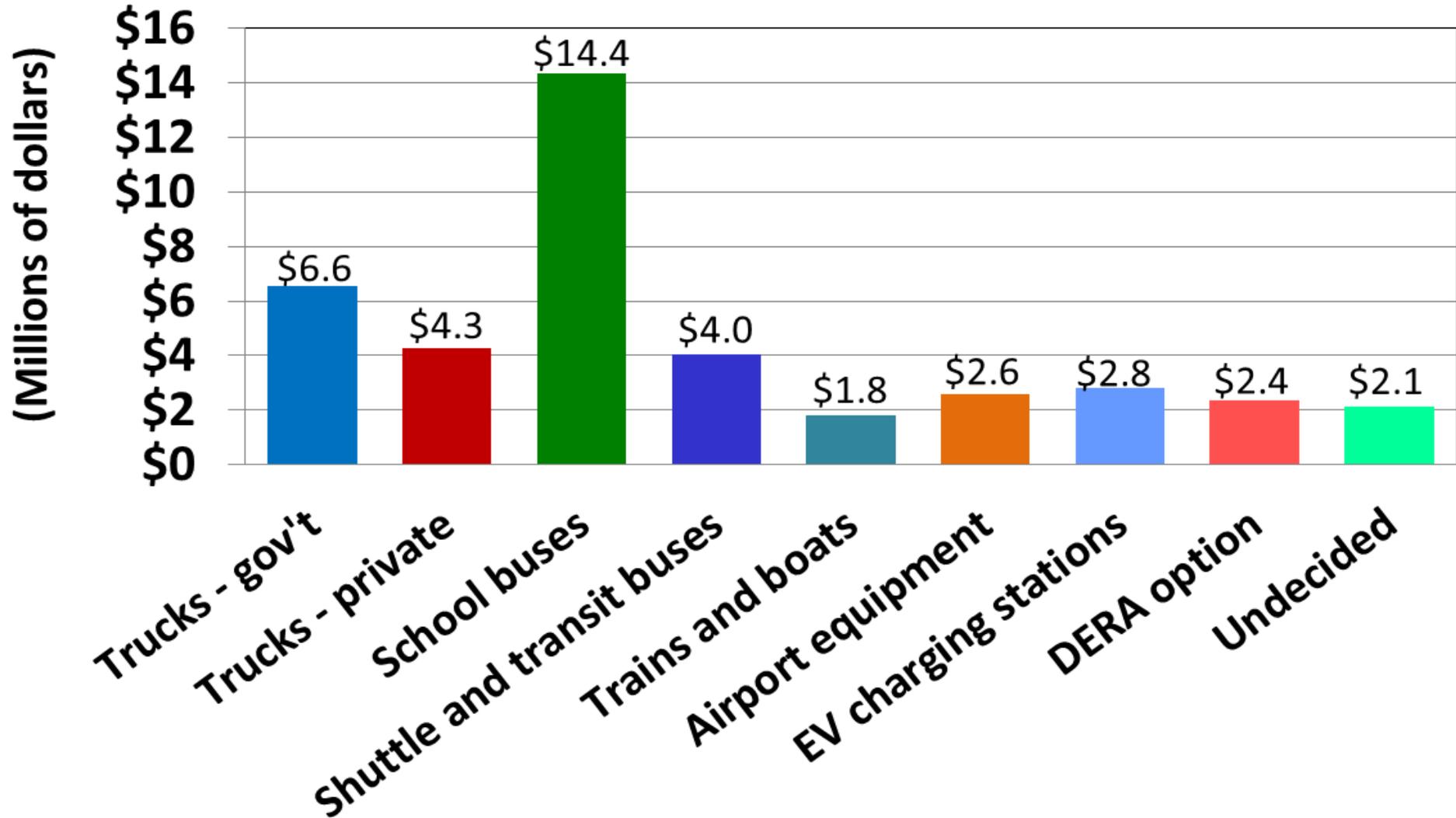


Total is more than 100 percent; respondents could select multiple answers

Question: Allotment/Project Category

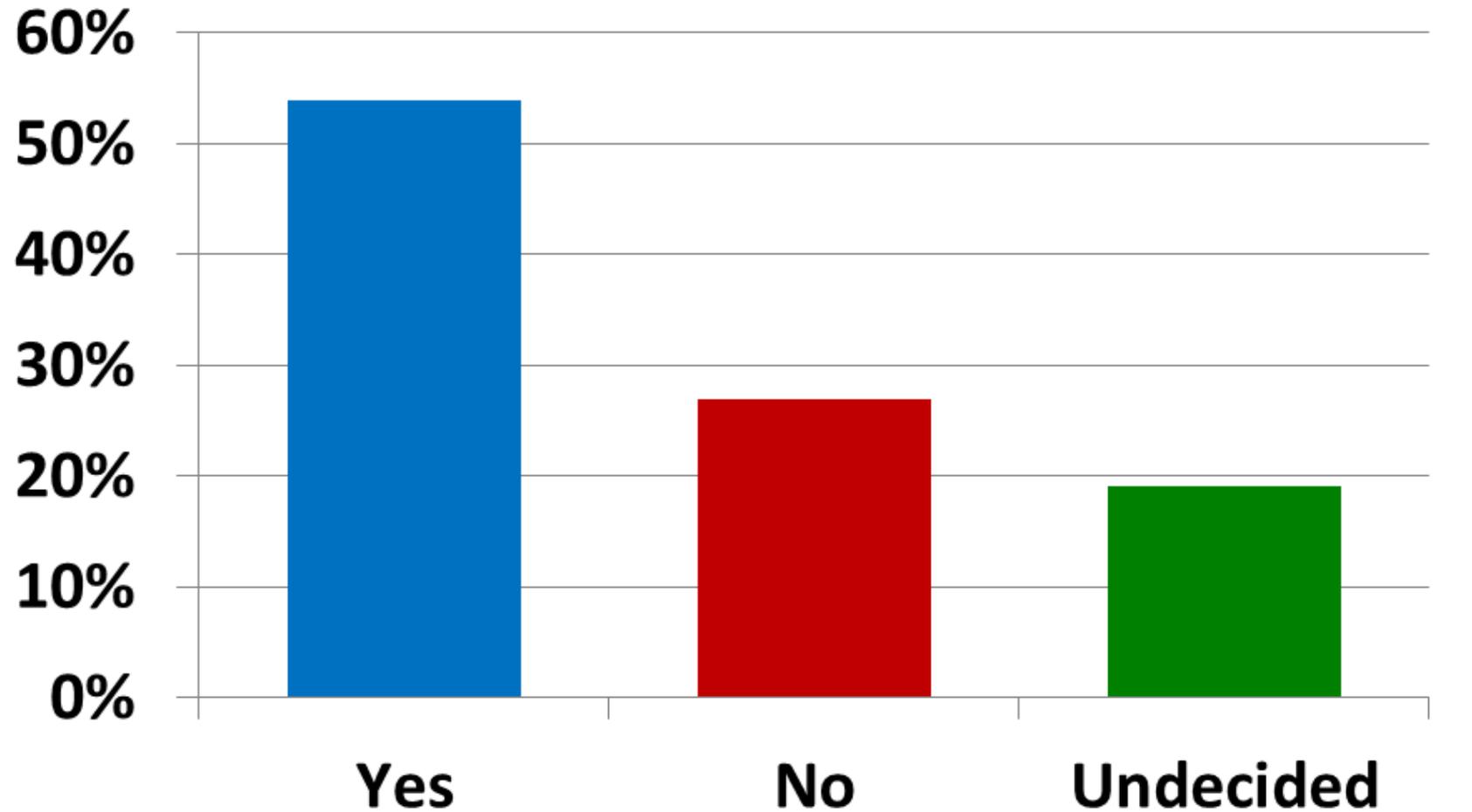


Question: Allocation/Project Category



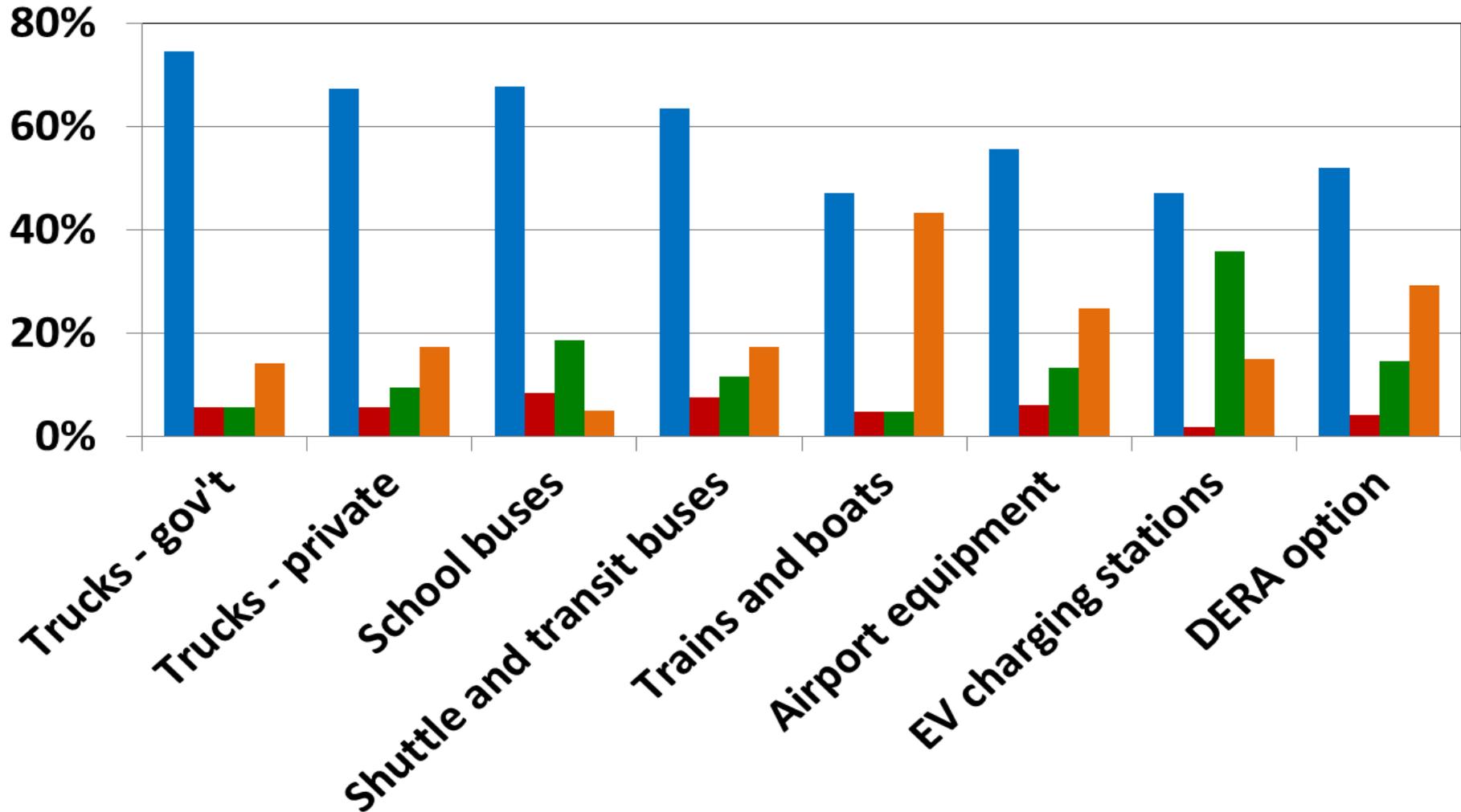
Some categories have been grouped in this slide

Question: Separate Application and Selection Processes



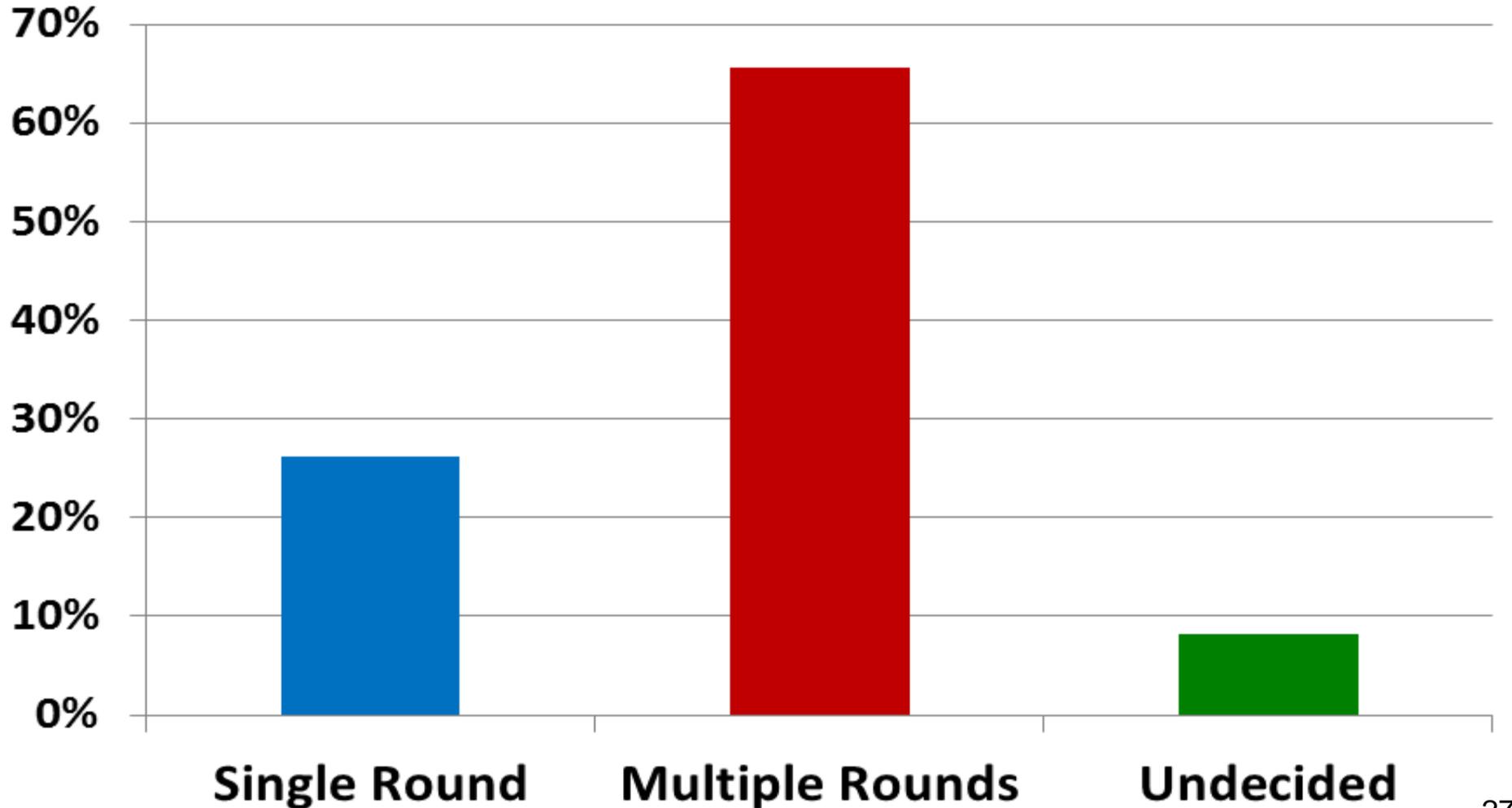
Question: Process for Selecting Projects

- Matrix/scoring method
- Hold a drawing
- Create team to develop project(s)
- Undecided

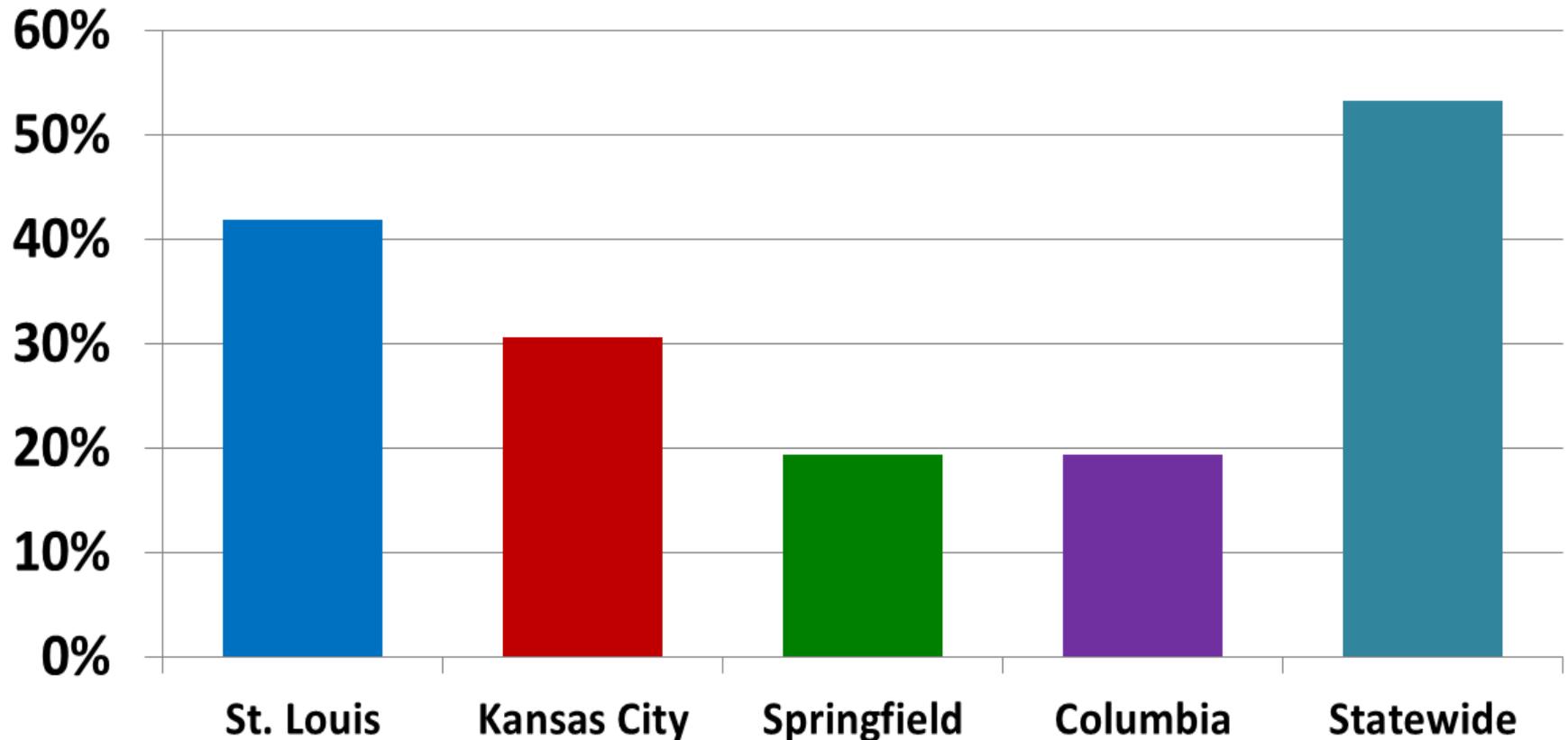


Some categories have been grouped in this slide

Question: Frequency of Consideration of Applicants

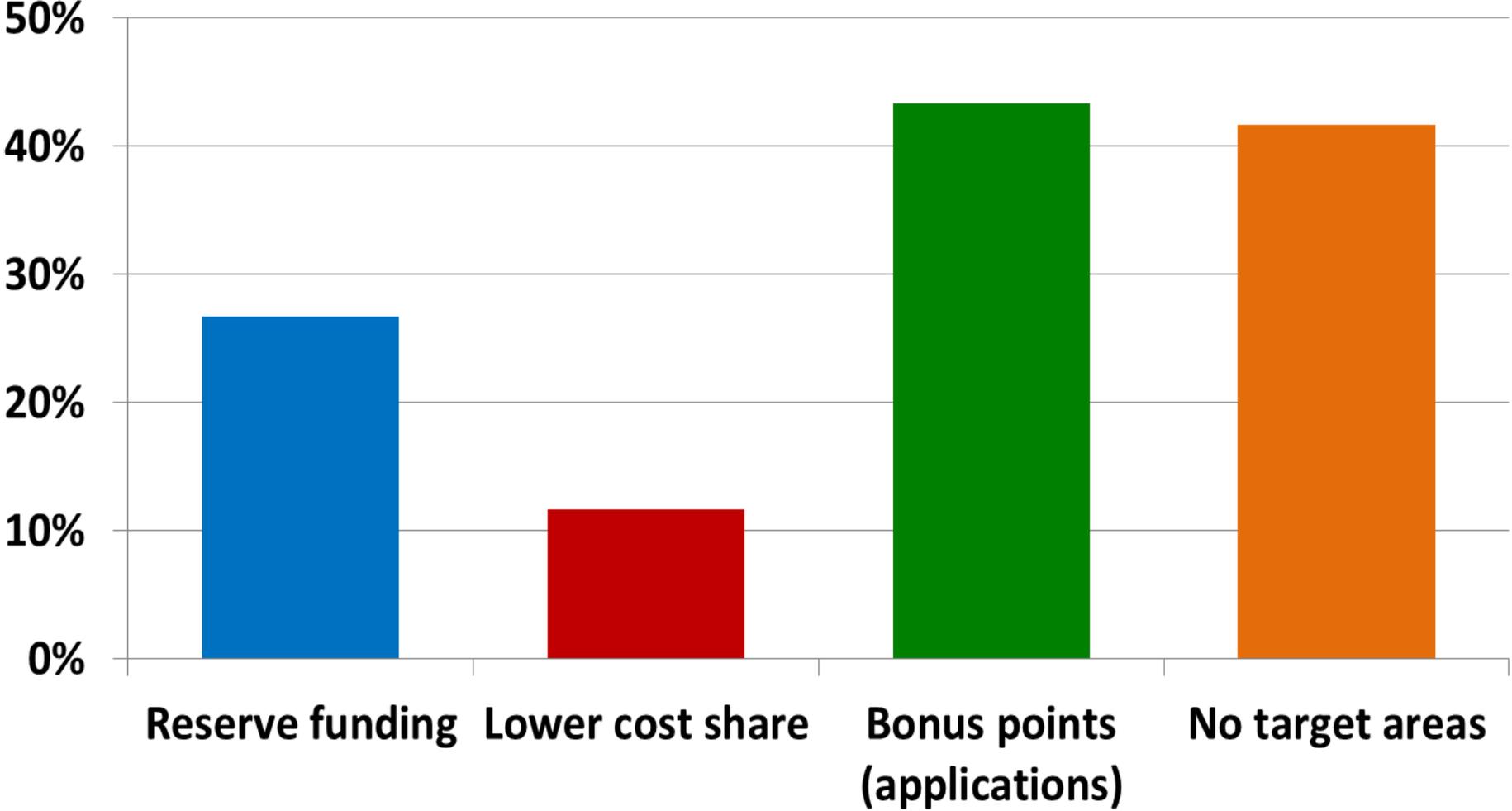


Question: Areas To Target



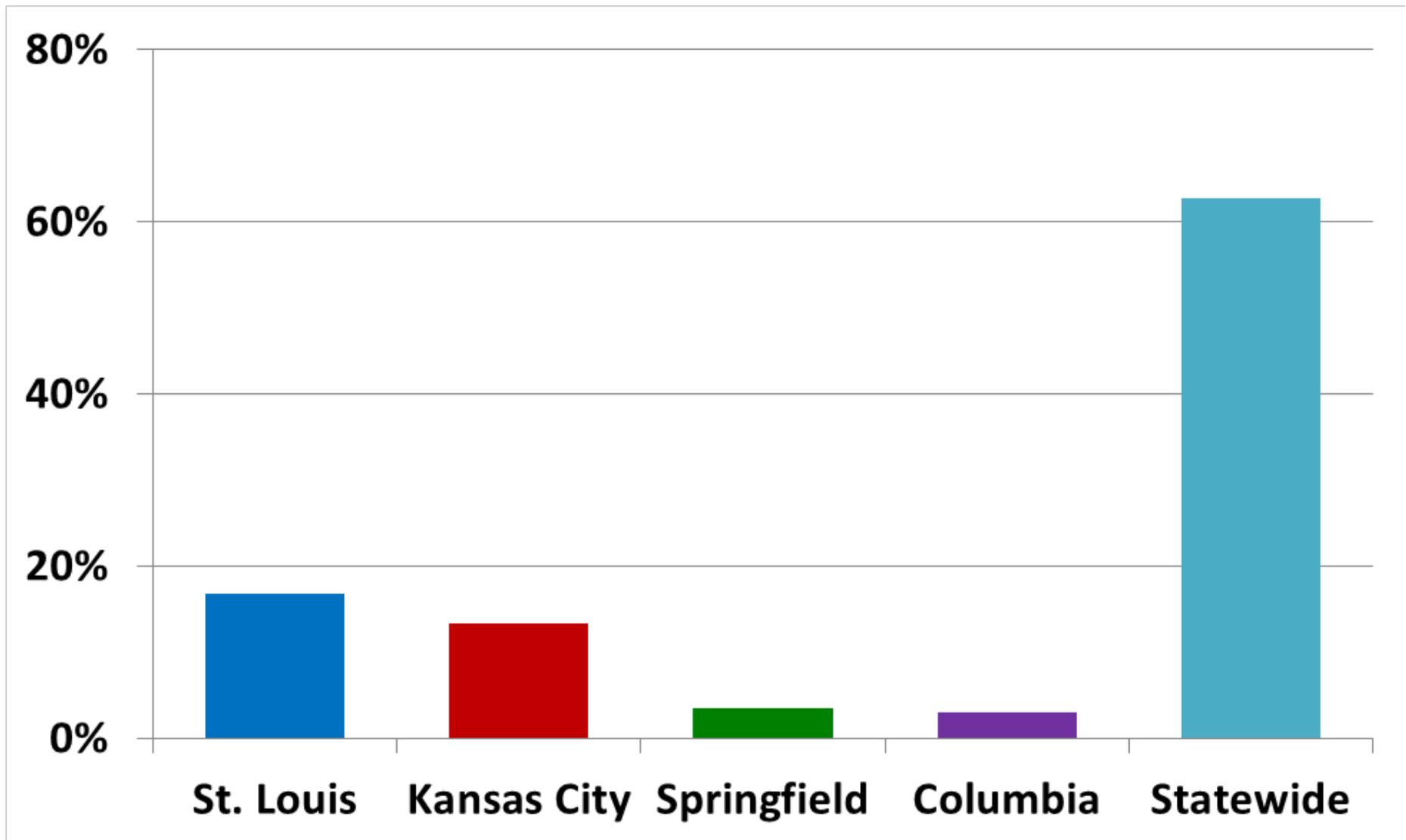
Total is more than 100 percent; respondents could select multiple answers

Question: Method for Targeting Areas

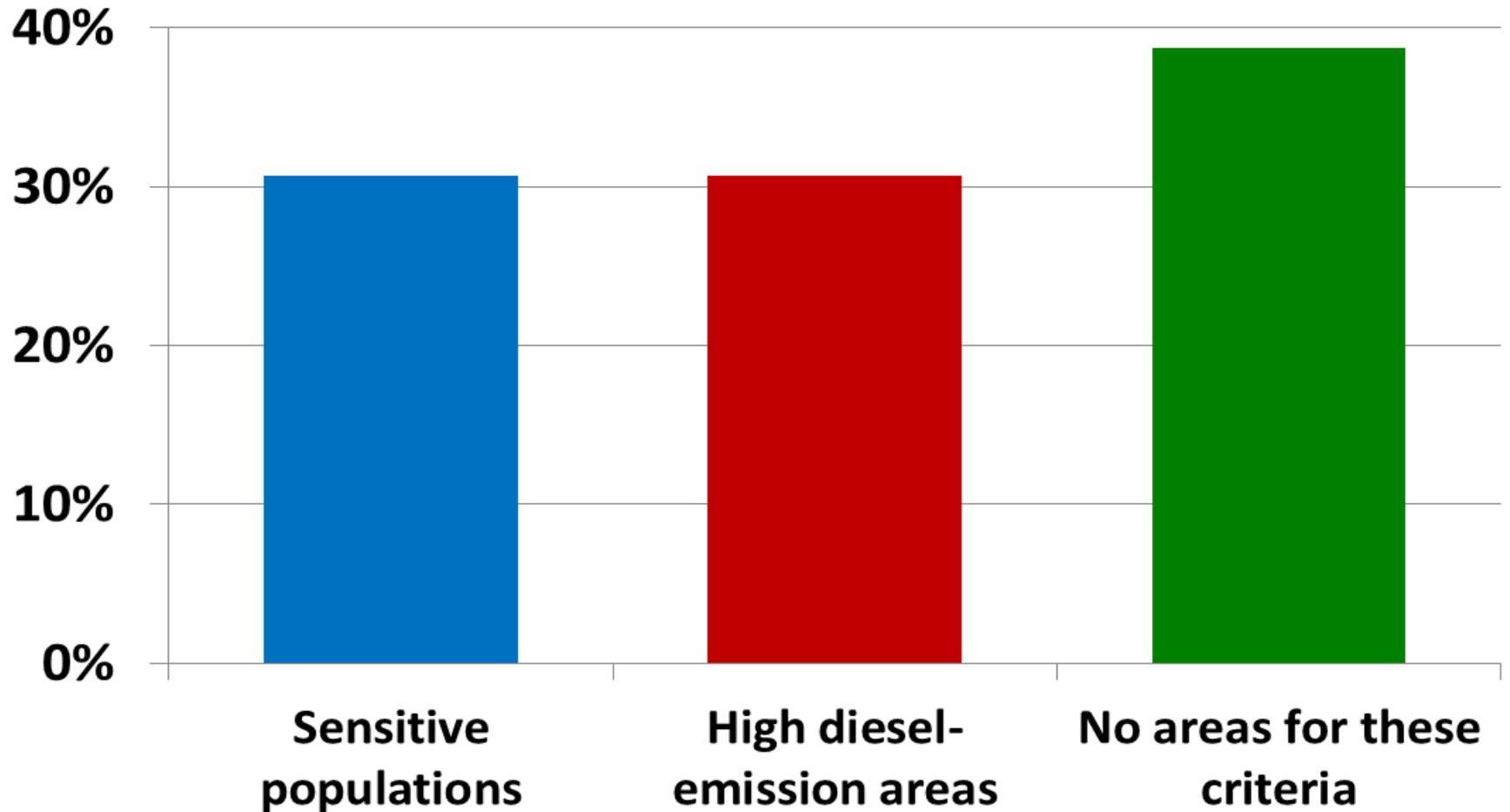


Total is more than 100 percent; respondents could select multiple answers

Question: Funding for Target Areas

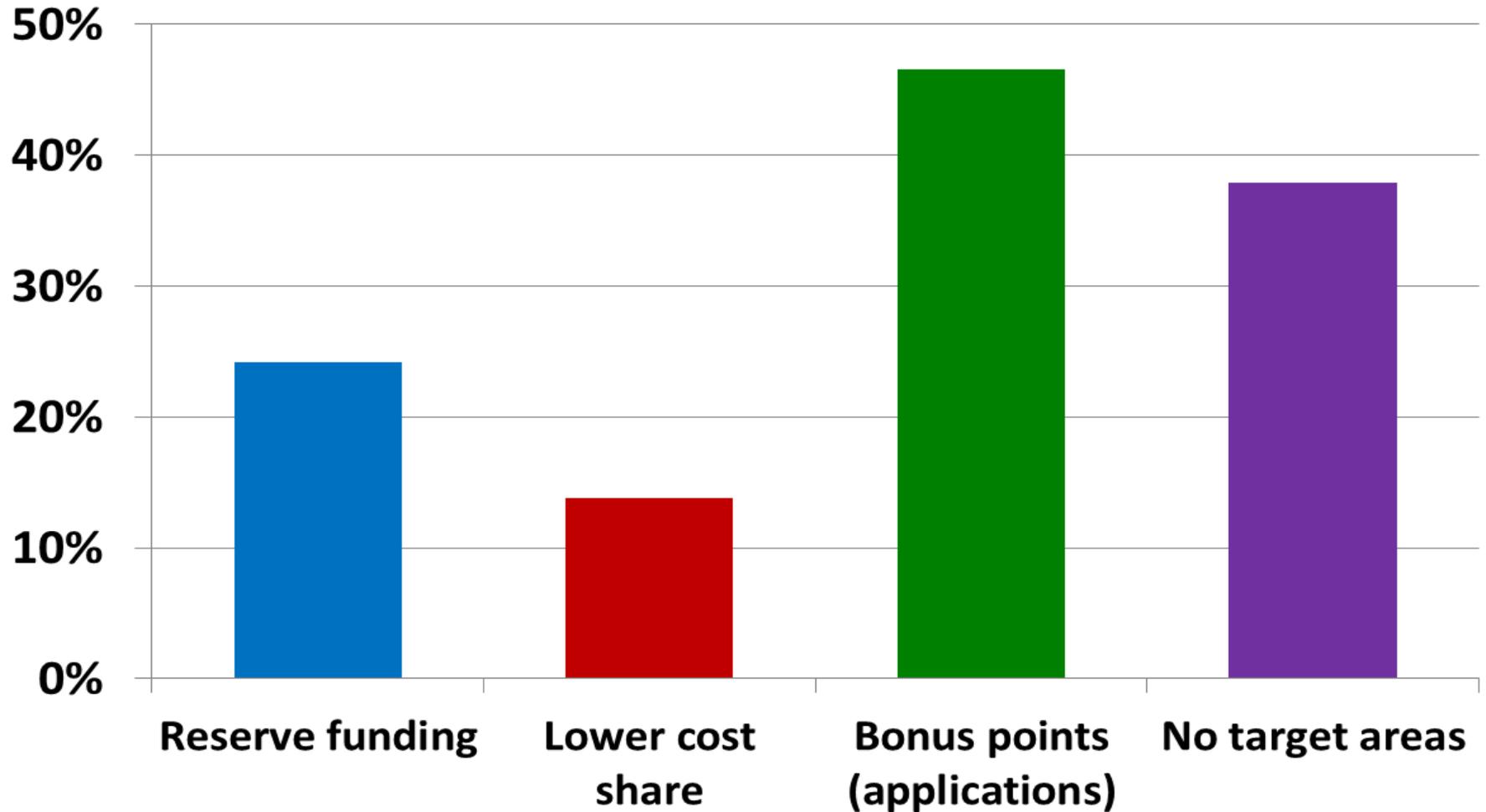


Question: Establishment of Target Areas Based on Other Criteria



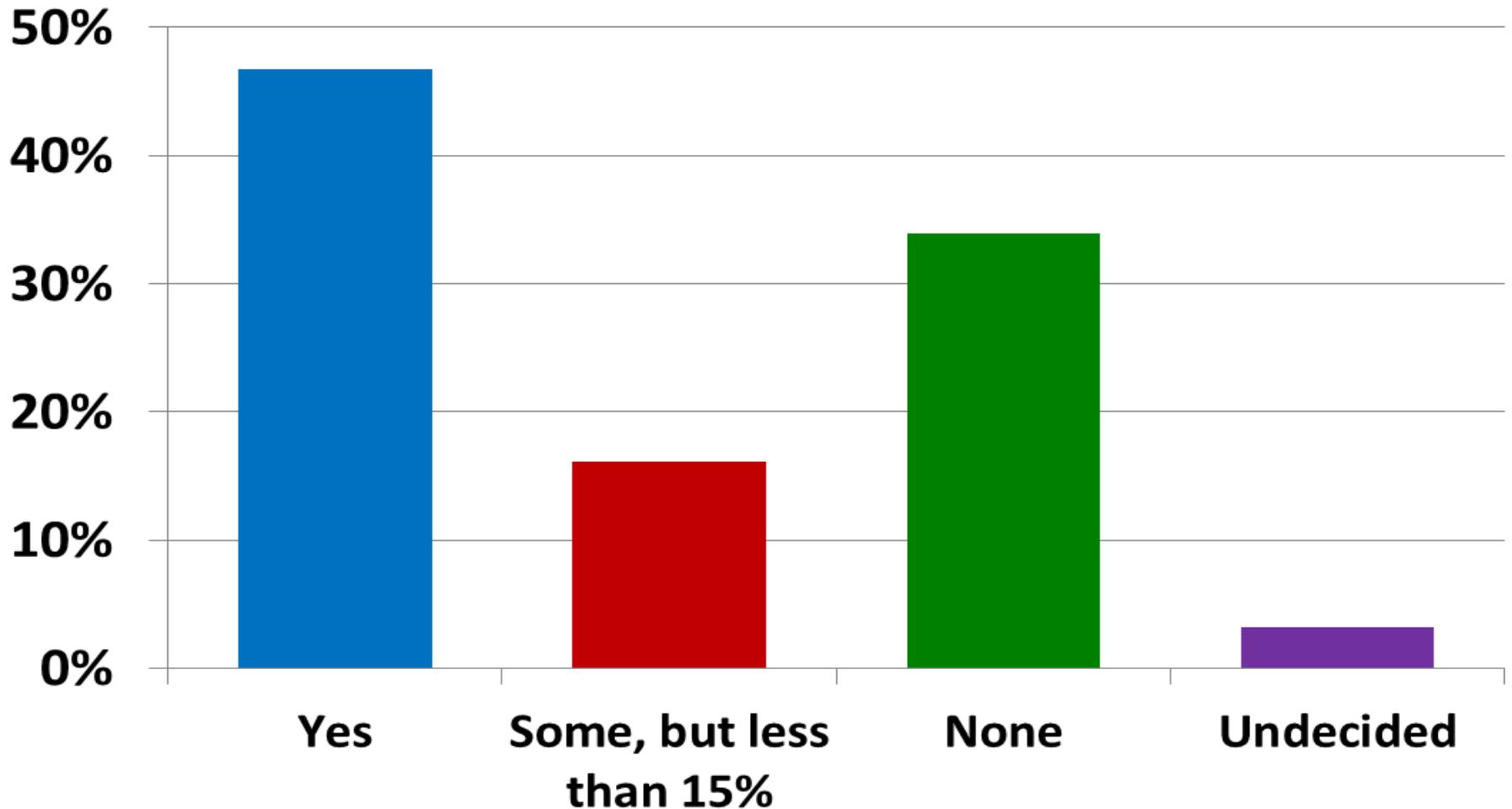
Total is more than 100 percent; respondents could select multiple answers

Question: Ways To Help Target Areas Chosen Using Other Criteria

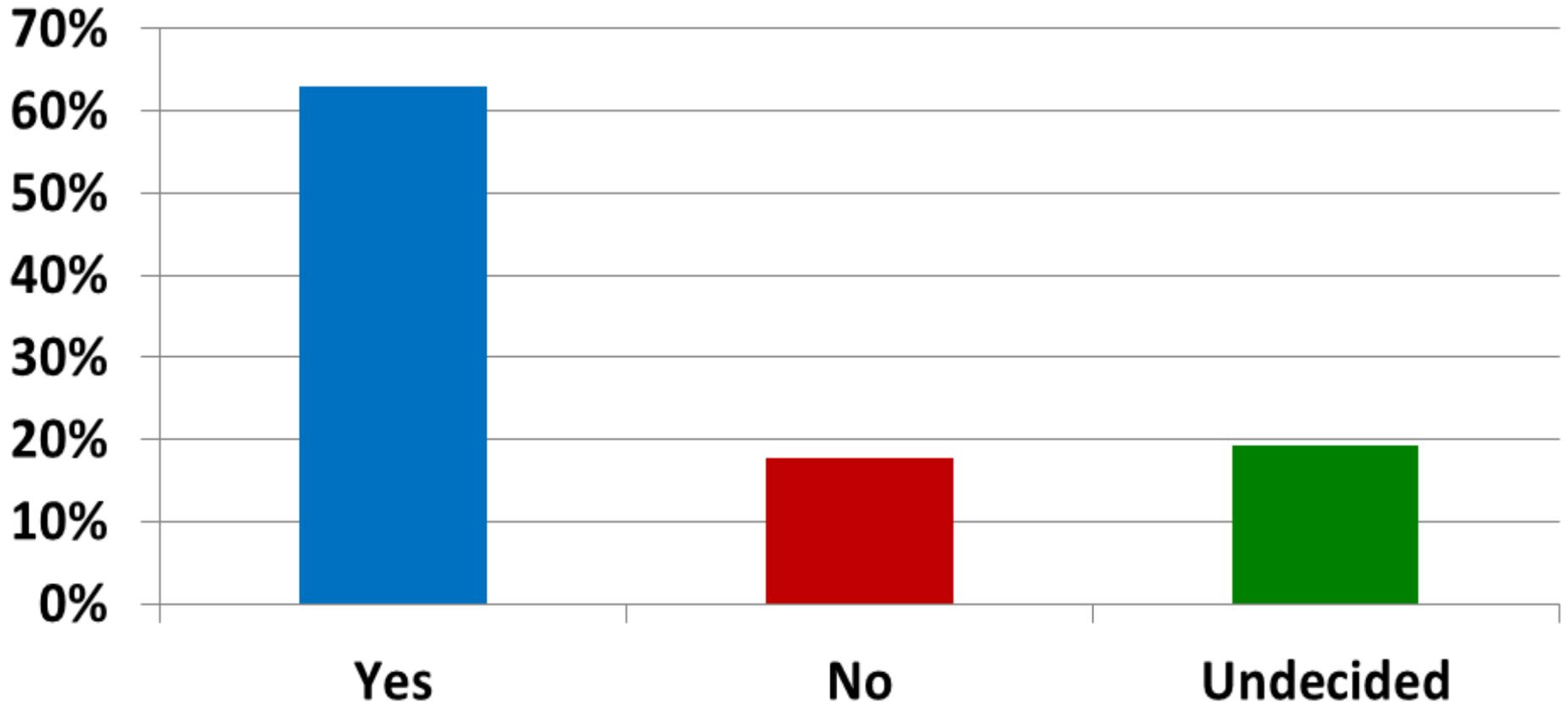


Total is more than 100 percent; respondents could select multiple answers

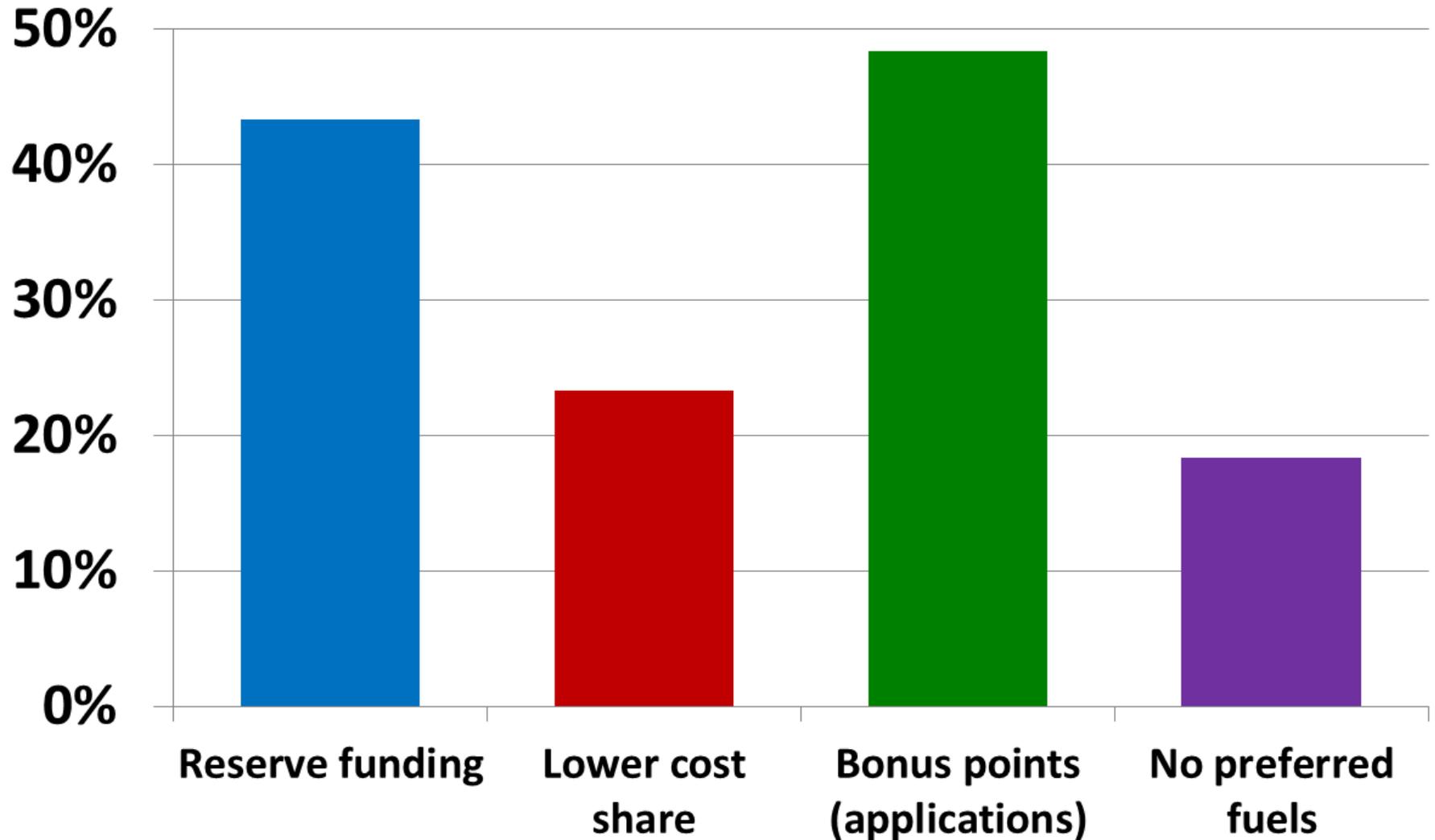
Question: Dedication of Maximum 15 Percent to EV Charging Stations



Question: Dedication of \$250,000 per Year to DERA Option To Qualify for Matching Bonus

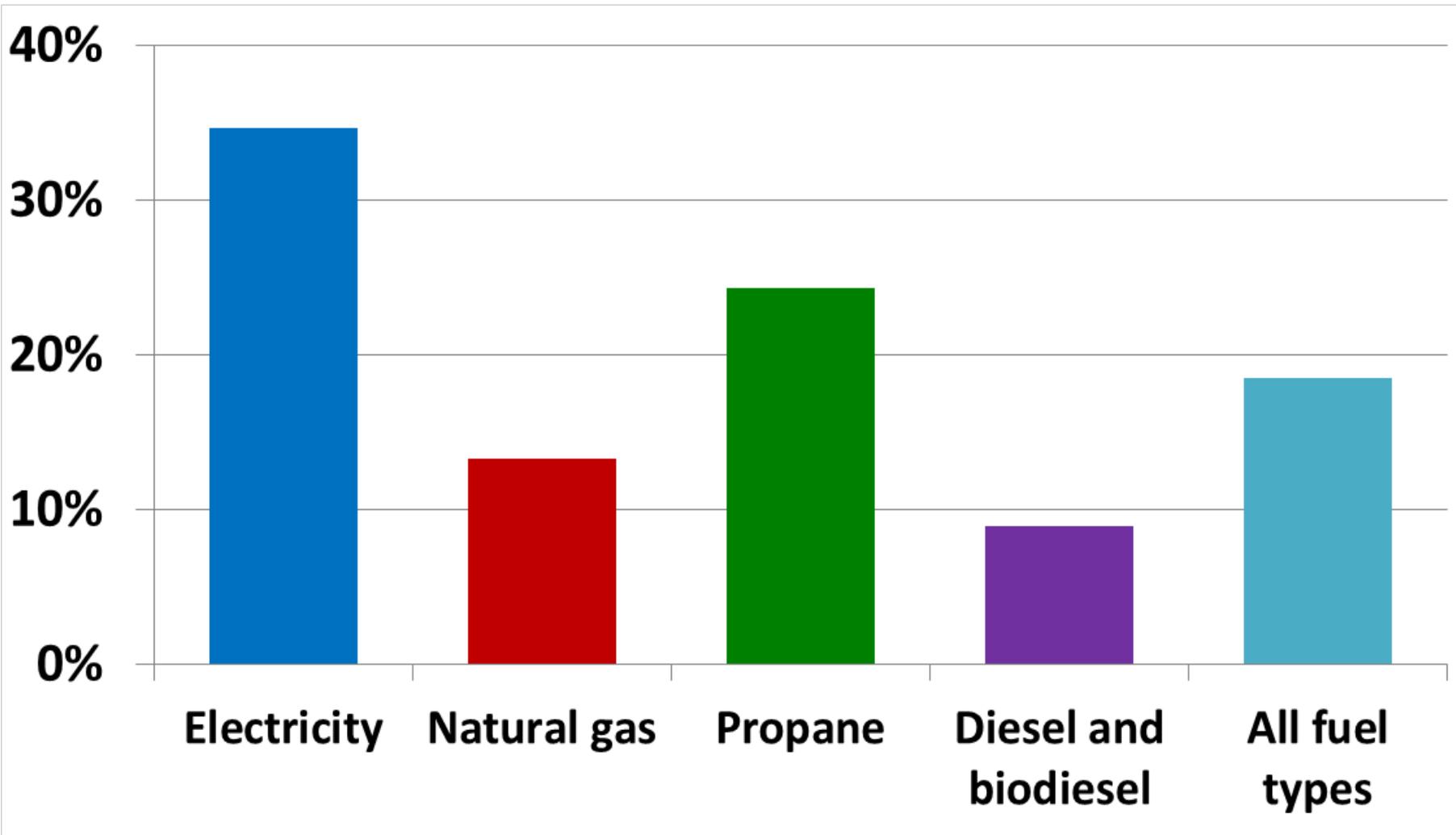


Question: Method for Targeting Fuels



Total is more than 100 percent; respondents could select multiple answers

Question: Funding for Fuel Types



Question and Discussion

Contact

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dnr.mo.gov/env/apcp/vw