

Environmentally Sustainable Transport, Case of Green Slow Mobility & Green Management Certification

Hirotsugu Maruyama
General Manager

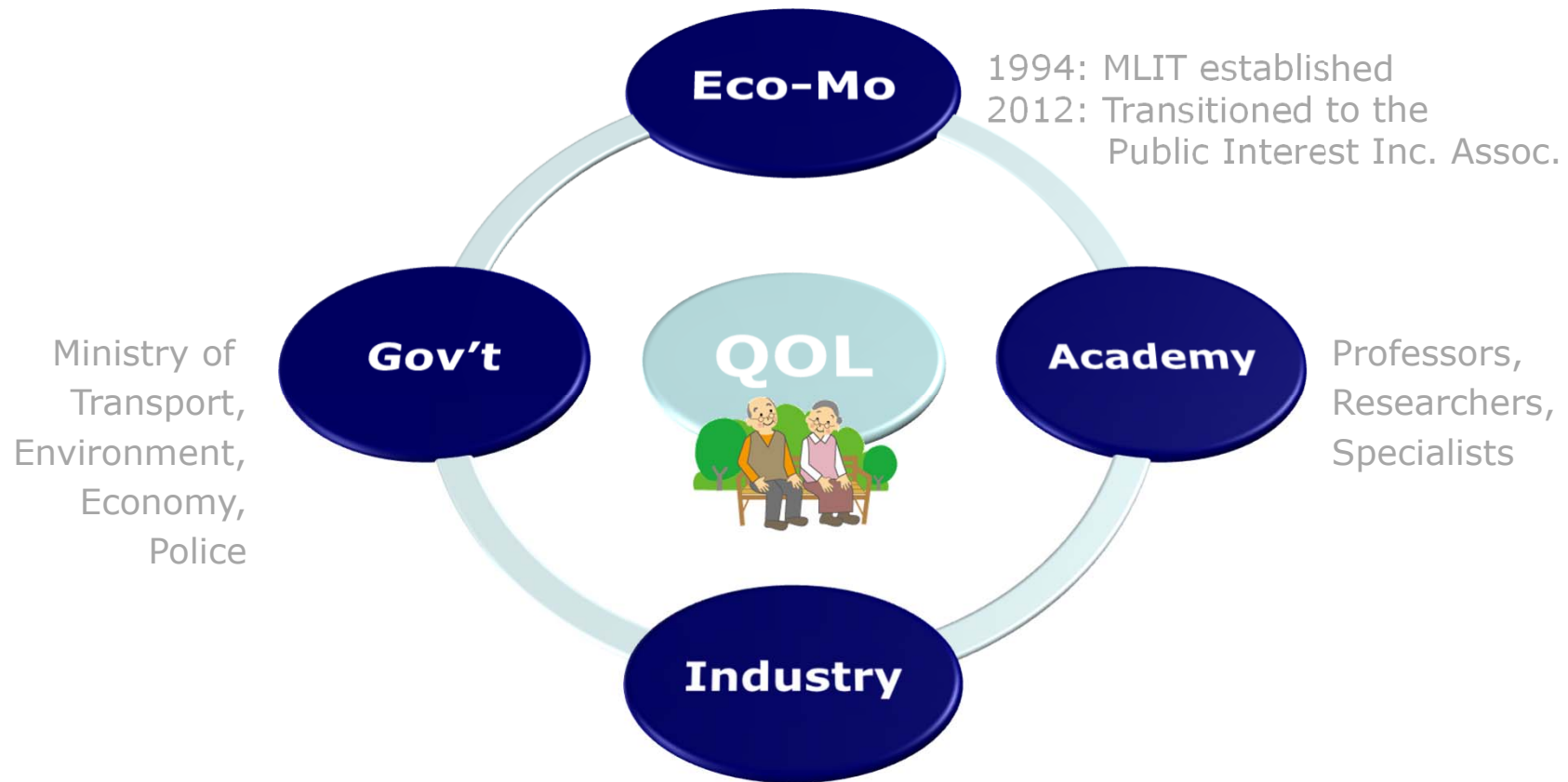
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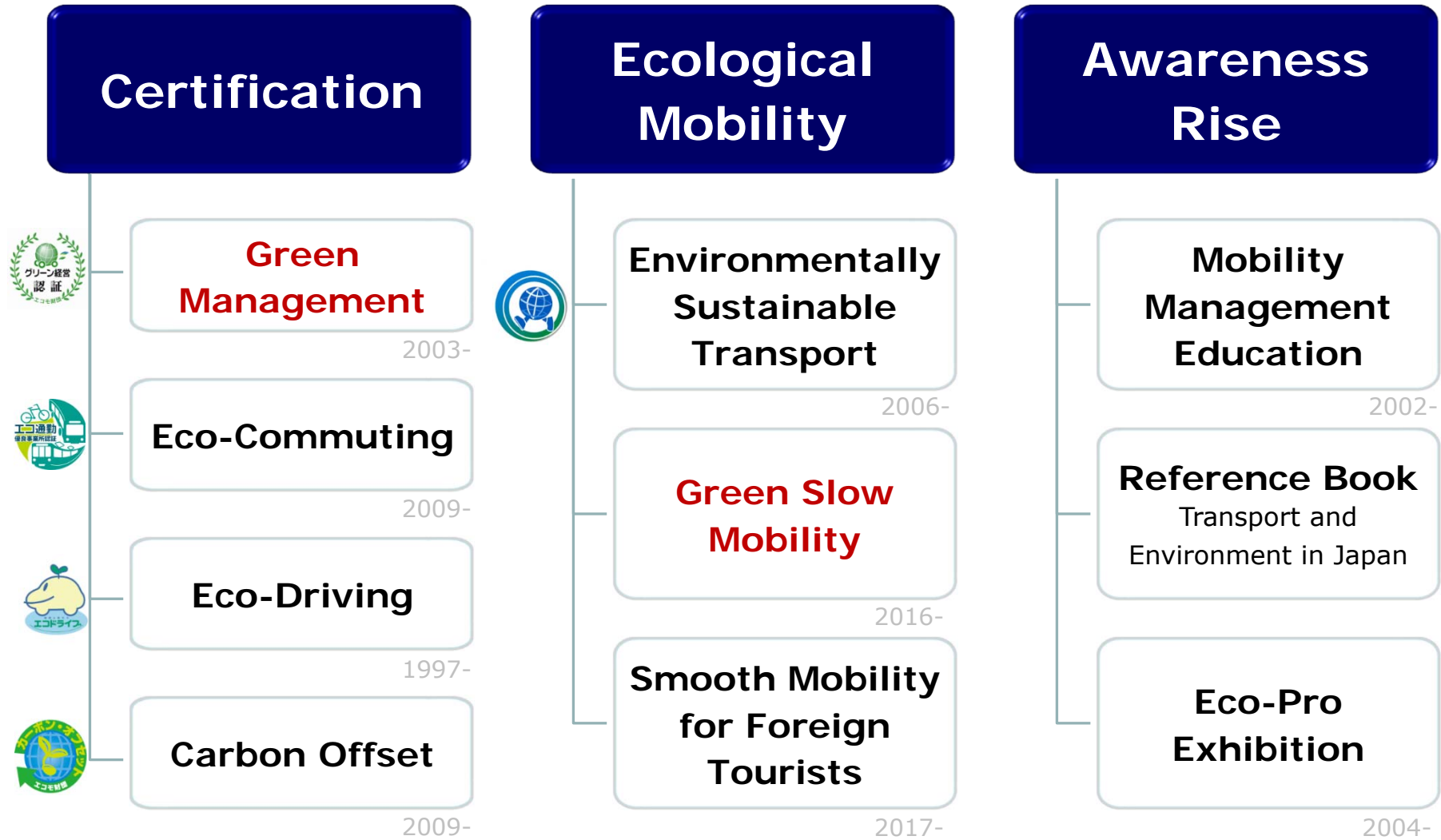
Foundation for Promoting Personal Mobility and Ecological Transportation

What is Eco-Mo Foundation

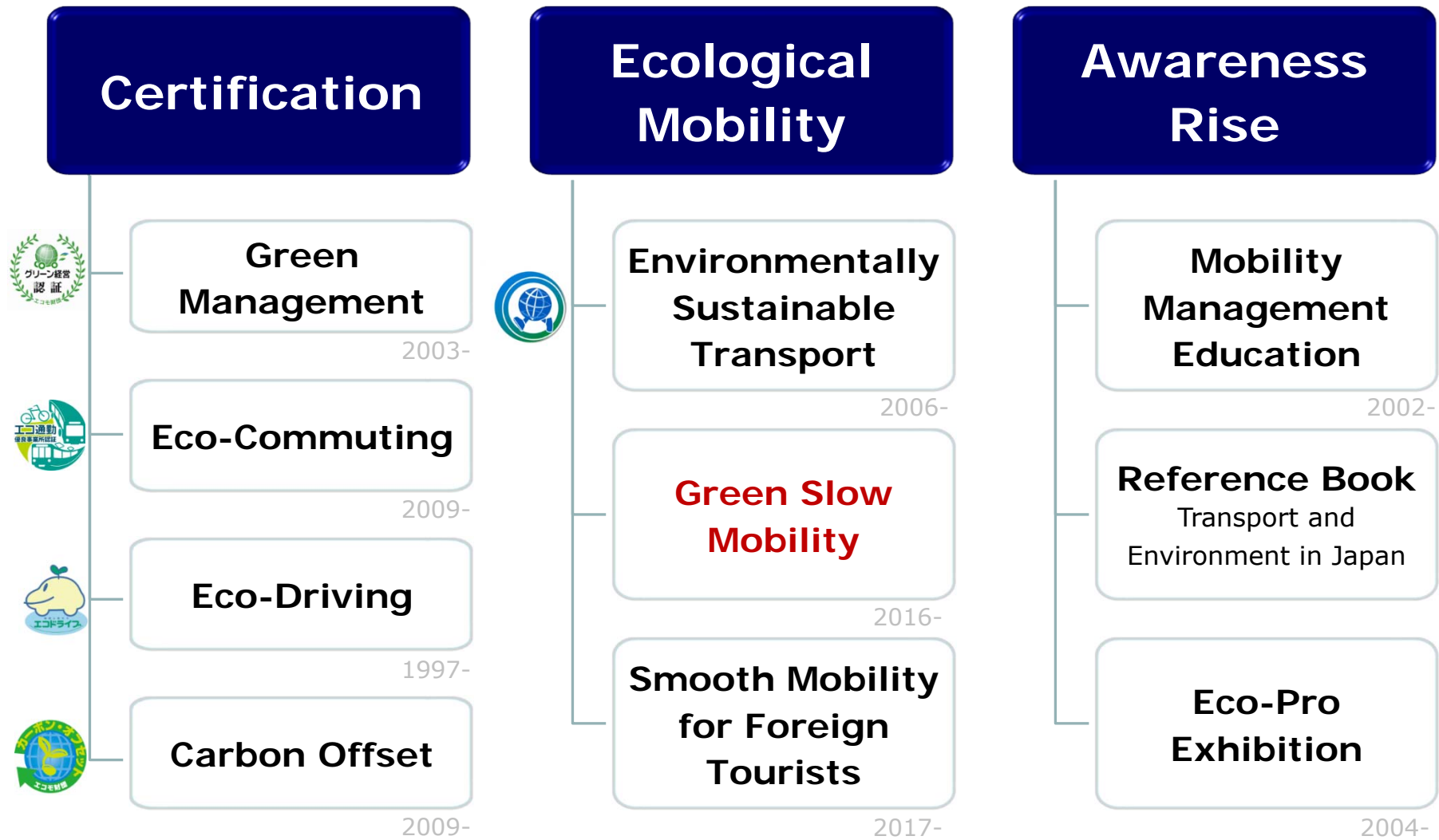
Ecological and barrier-free mobility for a better QOL



10 Projects of Environmental Transport Promotion Division



10 Projects of Environmental Transport Promotion Division



Summery

- Background

- Private car > Bus use ⇒ No last mile bus
- Elderly : No license, No go out, Worse QOL

- Measures

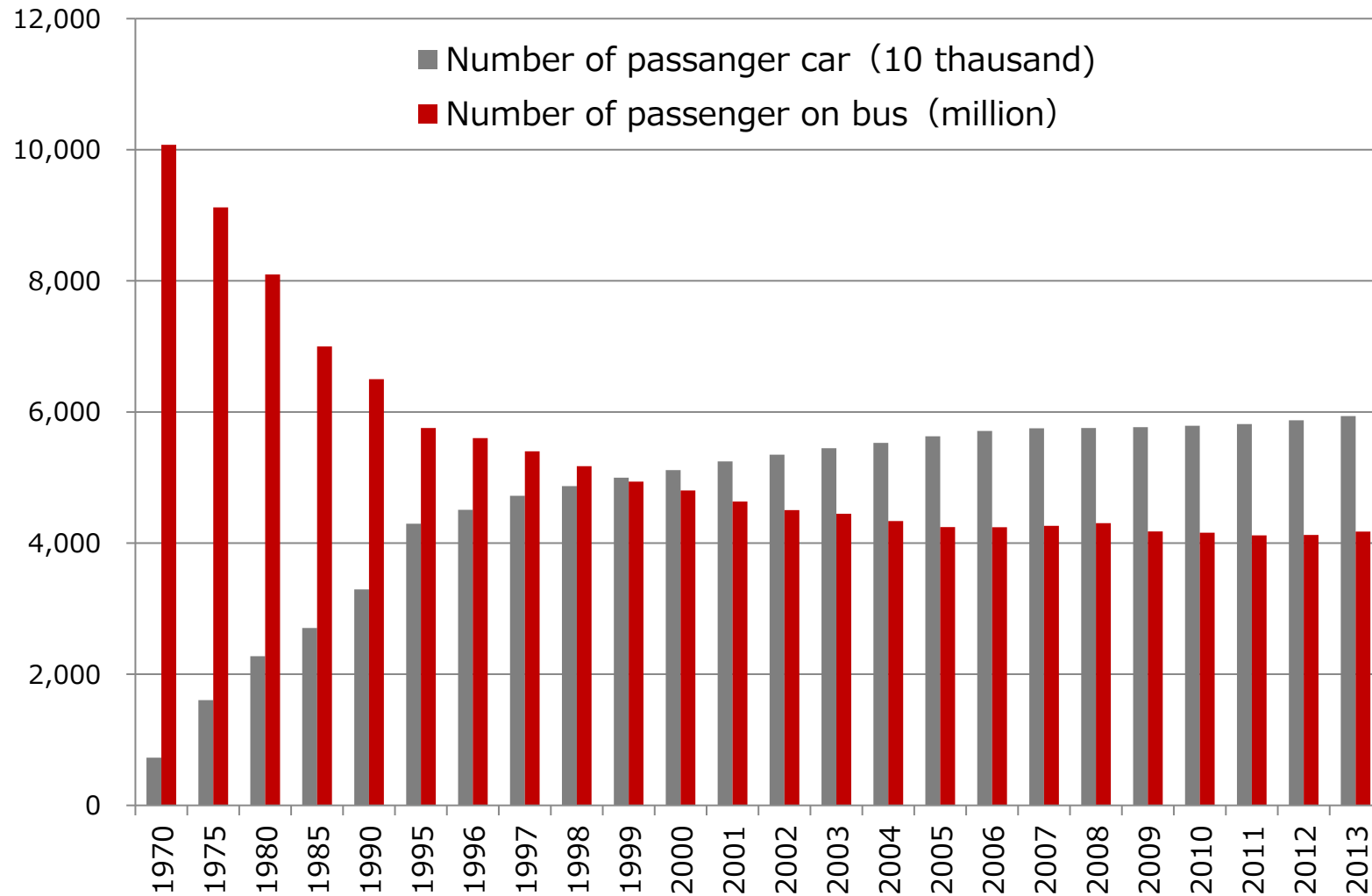
- Affordable mini e-bus, Conventional e-golf cart
- 20 km/h, Comfortable, Better elderly's QOL
- Operation cost : Cross-sector benefit



Environmentally Sustainable Transportation



Deterioration of public transportation

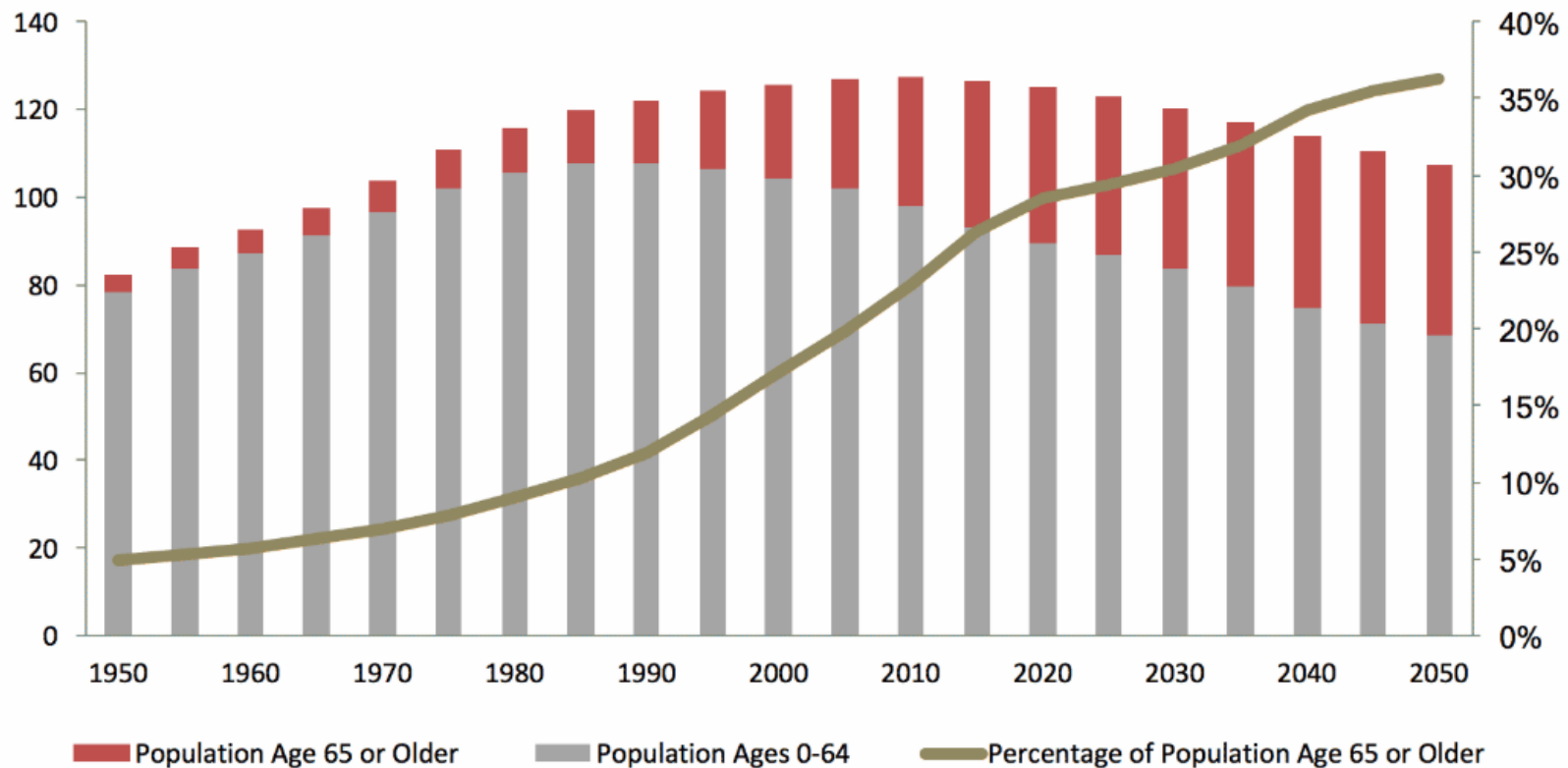


Source: http://www.mlit.go.jp/sogoseisaku/transport_policy/sosei_transport_policy_fr1_000010.html



Aging

Japan Graph 1 Population by Age Group (in Millions) and Percentage of Population Age 65 or Older



Source: UN Population Division, OECD



What is Green Slow Mobility

- ✓ Battery EV, A speed limit of 20km/h, Four or more passengers
- ✓ Low speed deregulation: Seatbelts-free
- ✓ No type-approval: Crash test exemption
- ✓ Easy to get on and off for elder people: A low floor, a high roof, no doors, a solid handrail and a high seat position
- ✓ Example: “Conventional electric golf car”+ “Speed Limiter” + “Headlights” + “Back mirror”

Feature	Positive	Negative
Slow (20km/h)	Faster than running, Relaxed, Open communication, Safer for the elder	Slower than vehicle
Open Low floor	Easy access Can feel outside air and smell	Wet on rain (protected by rain cover)



History of GSM promotion

2014

- **Wajima Chamber Commerce** started the first GSM service on a public road

2015

- **Yamaha Motor Co., Ltd** presented GSM promotion initiative at our EST seminar

2016

- **Eco-Mo** started of a dedicated committee for the promotion
- executed feasibility study, made 11 scenarios

2017

- Eco-Mo studied the case of the California private use
- held the public forum on possible solutions by GSM

2018

- **MLIT** released the initiative for the GSM promotion
- MLIT and Eco-Mo executed the real-world examination at selected 8 areas

2019

- MLIT & MOE provided the subsidy to the vehicle procurement
- authorized official vehicle models for the subsidy



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Wajima City





下のスーパーの英訳
走行中の映像をご覧ください

道の駅輪島ふらっと訪夢～輪島朝市～輪島キリコ会館



朝日新聞
DIGITAL

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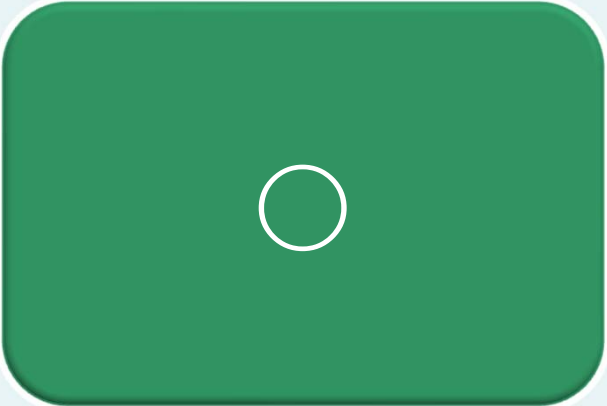





Obvious issues, possibly solved by GSM

			Senor	Student	Delivery	Tourist
Public road	Downtown	City			Less parking space	
		Rural				
	Local	City	Few bus and taxi			Limited schedule
		Rural				
	Mountain					
	Island		High fuel price			
Huge parking lot Amusement park			Long distance walk Heavy baggage			



Real-world examination

			Senor	Student	Delivery	Tourist
Public road	Downtown	City			N.A.	
		Rural				
	Local	City				
		Rural				
	Mountain					
	Island					
Huge parking lot Amusement park						



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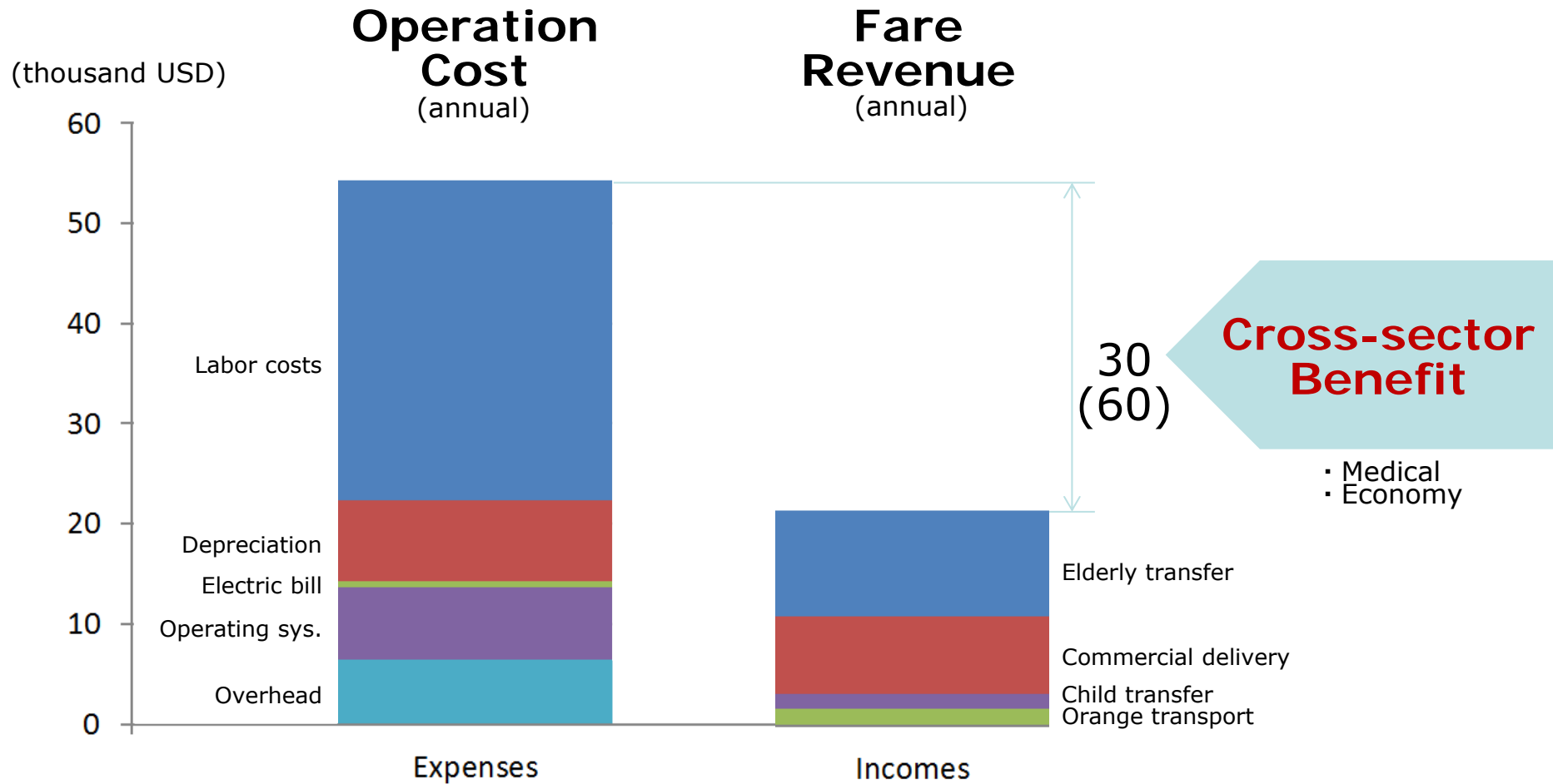
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The first taxi of GSM in Tomonoura city



Balance chart of GSM as public transportation

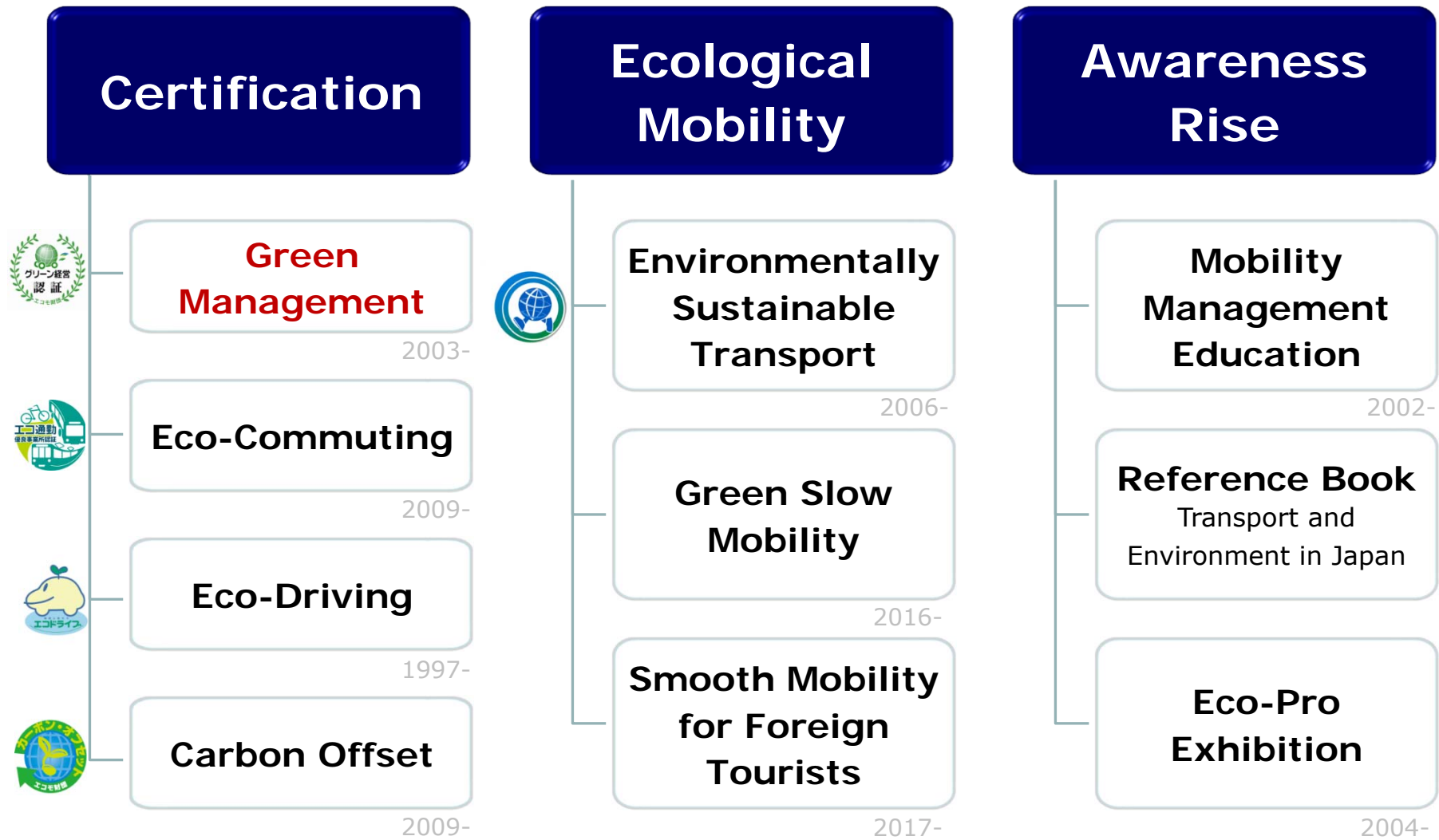


e-Mobility balance (elderly people)

	Short-range	Mid-range	Long-range
Public	Green Slow Mobility <20kph	Next Generation Train / LRT / BRT / Bus / Taxi	
Private	Ultra Compact Vehicle <60kph		
	Next Generation Vehicle		



10 Projects of Environmental Transport Promotion Division



Green Management Certification



◆ Comparison between Green Management and ISO

	Eco-Mo GM	ISO14001
Sector Coverage	+ *1	+++
Less Certification Fee	+++	+
Onsite Review	++ 2 years	+ every year
Less Renewal Fee	+++	+
Less Requirement	+++	+
Less Workload	+++	+
Direct Effect	+++	+++
Indirect Effect	++	++

*1 Truck, Bus, Taxi, Warehouse, Port Transportation, Domestic Passenger Shipping, Domestic Cargo Shipping

Green Management Certification



◆ Overview

- MLIT Environment Action Plan is supporting the promotion of the Green Management Certification
- Eco-Mo establishes the Green Management Manual* of **check list basis**, by which transport companies can operate the Green Management
- Eco-Mo assigns third party investigation and issues the certification

* 1 The Manual requires **C-A-P-D** cycle

C heck	Find weakness & strength according to the manual
A ct	Take measures for weakness & strength
P lan	Make or modify action plan
D o	Complete the plan; Repeat C-A-P-D



Green Management Certification



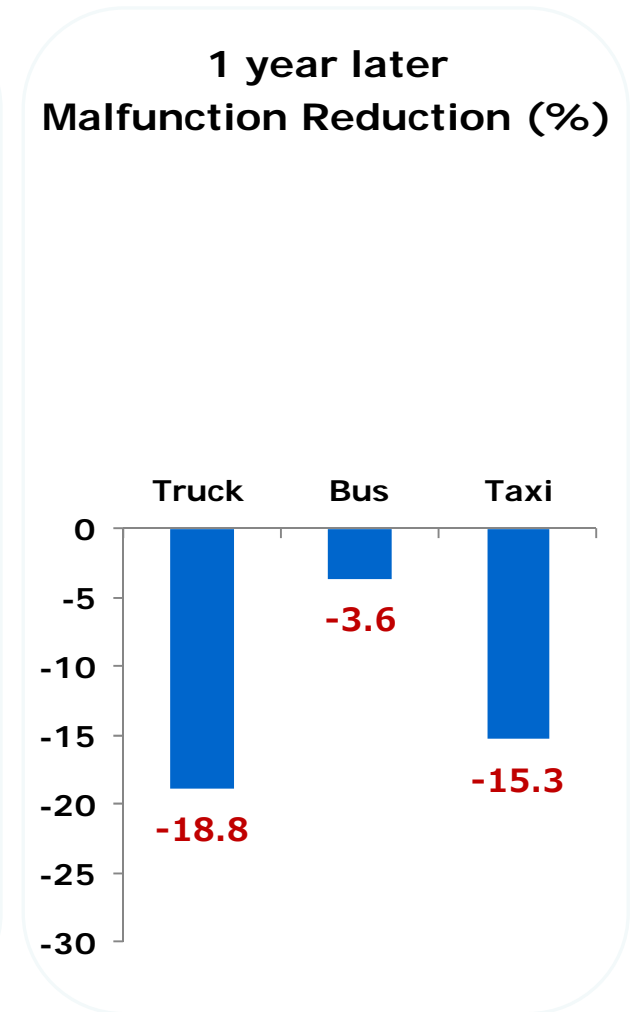
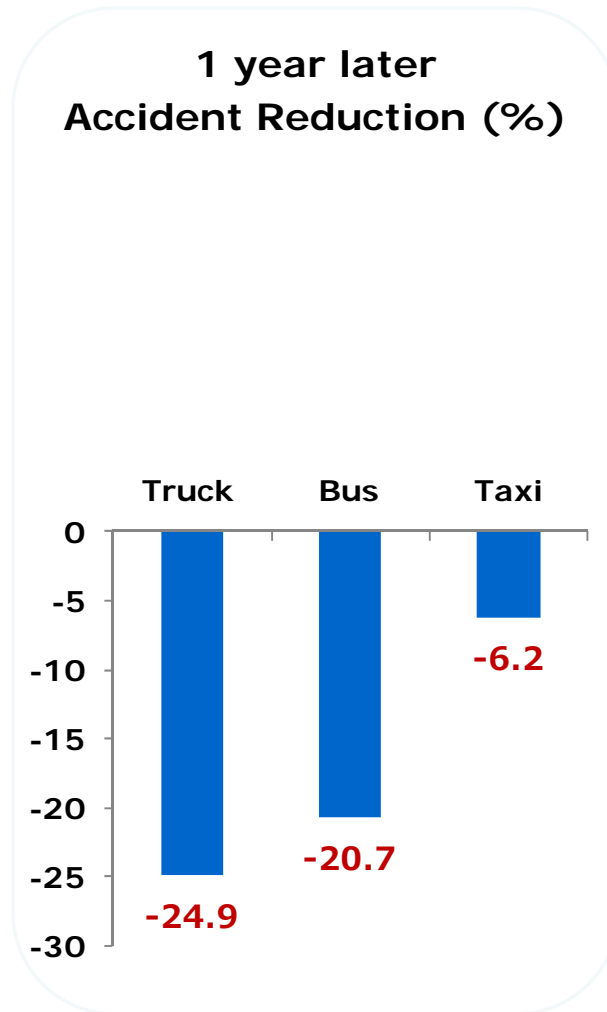
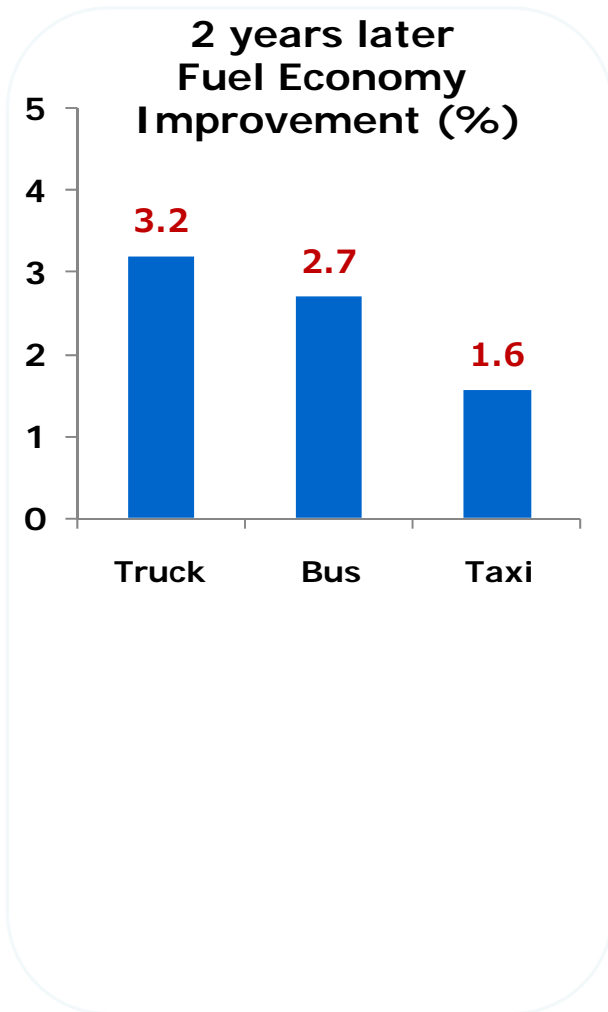
◆ Example of the check list

Requirement	Detail
1. Adequate operation (administration and responsibility) for the environmental protection	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Note fuel economy <input type="checkbox"/> Set fuel economy targets <input checked="" type="checkbox"/> Assign person in charge <input checked="" type="checkbox"/> Educate drivers <input type="checkbox"/> Share Eco-driving manual <input checked="" type="checkbox"/> Quit idle at parking <input type="checkbox"/> Introduce onboard fuel economy improvement equipments
2. Implementation of Eco-driving	
3. Introduction of low pollutant vehicles	
4. Inspection and maintenance of vehicles	
5. Proper waste treatment and promotion of recycling	
6. Execute environmental protection by administrative team	

Threshold: 36 items out of 67 in total



Effects



Cost Saving in 10 years



◆ Equivalent to fuel cost for one year

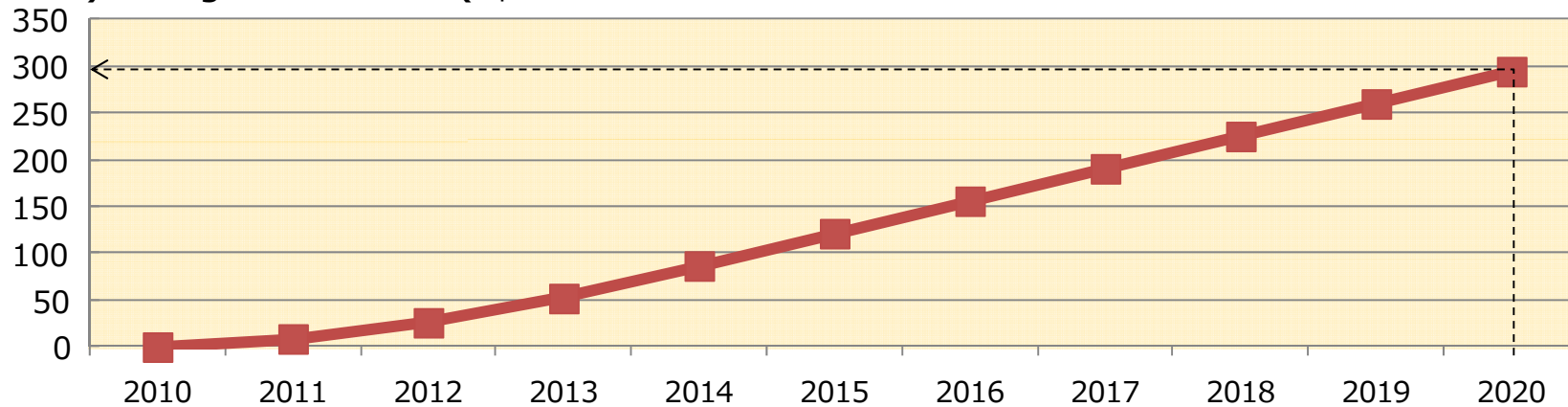
Effects

Accident	Malfunction	Fuel Economy
-24.9%	-18.8%	+3.2%

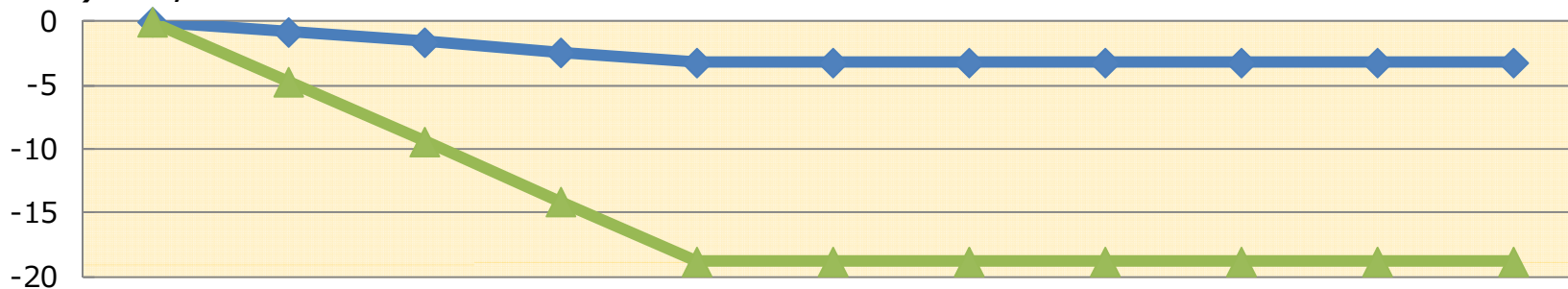
Average Company Scale

Employees	Trucks	Fuel	Maintenance
22 ppl	22 car	310k\$	130k\$

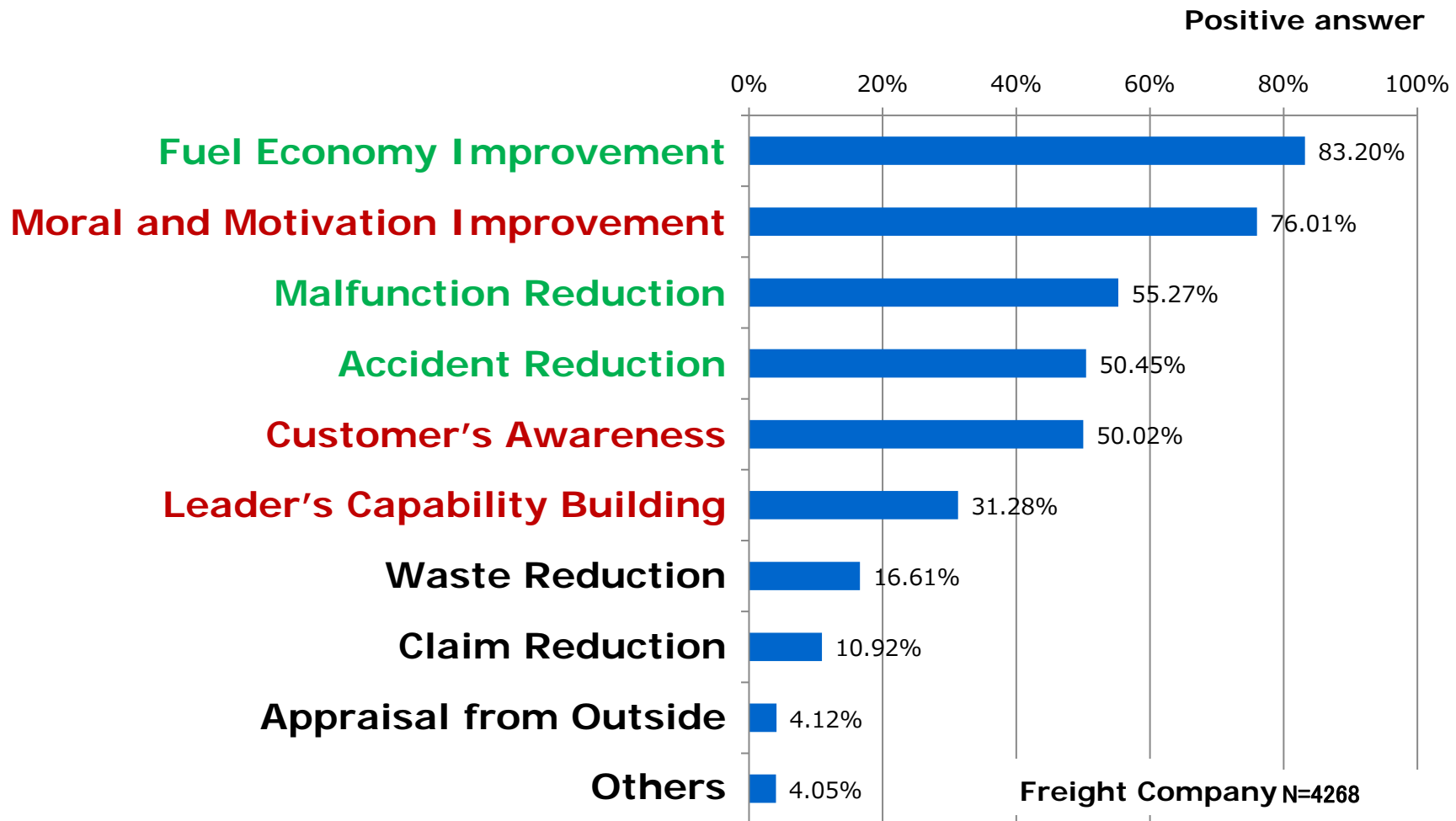
1) Saving accumulation (k\$)



2) Fuel, Maintenance reduction (%)



Overall Opinion



Corporate Strategy



◆ Proactive management with Green Management Certification



Better Safety, Ecology and Economy

Save 1-year fuel with 10-yrs continued



Safety driving



Ecology Transport

Eco-driving

Inspection & Maintenance
Proper waste management



Social contribution, Sympathy



Thank you

