

NISSAN MOTOR CORPORATION



Nissan Research Center Social Science Team Recommendation to the board

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Sorry,
nothing about NISSAN's FCEV plan
in 2017 😊

Social Science Team: Mission

To realize 4 Essential Conditions which will allow Nissan to start “full- scale” FCEV business

Mission

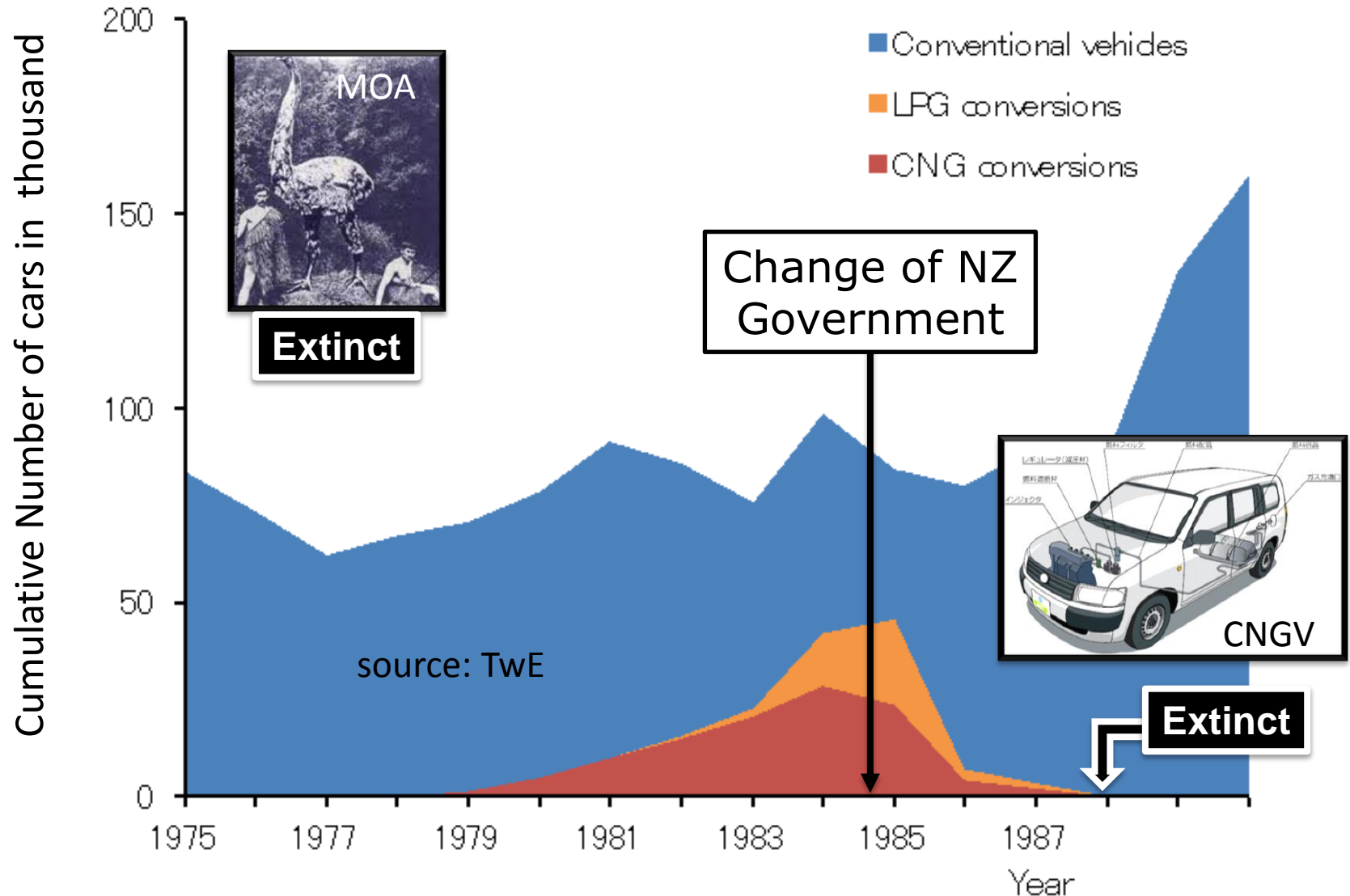
- | | |
|--------------------|-----------|
| ✓ FC Supply-Chain | (Nissan) |
| ✓ FC Manufacturing | (Nissan) |
| ✓ HRSs | (Partner) |
| ✓ Customers | (All) |

Our biggest and immediate concern:

Mission

- ✓ FC Supply-Chain (Nissan)
- ✓ FC Manufacturing (Nissan)
- ✓ HRSs (Partner)
- ✓ Customers (All)

New Zealand in 1980s



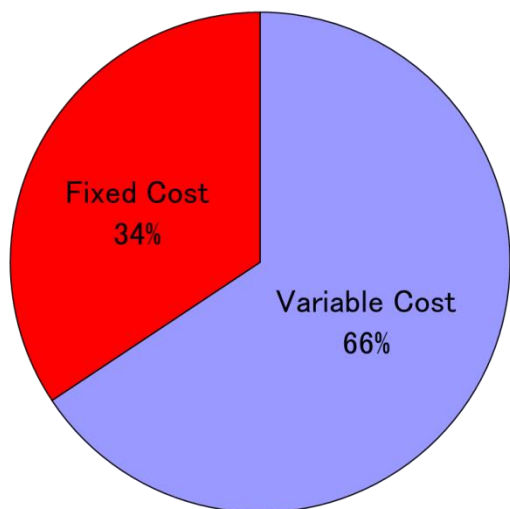
Energy Supply Responsibility

Let's overview H2 Key Figures

Ideal Price = 100% Utilization Factor

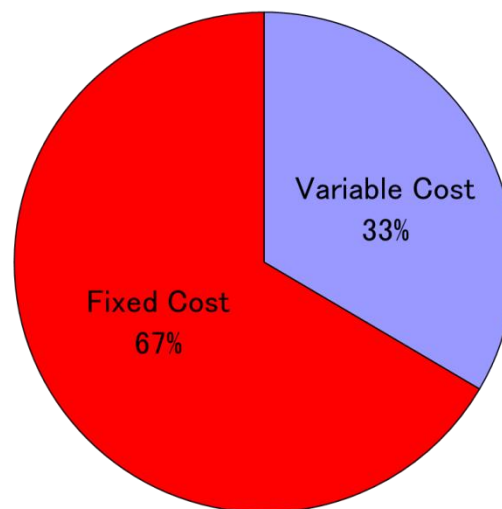
Gasoline

100km → **about €10**



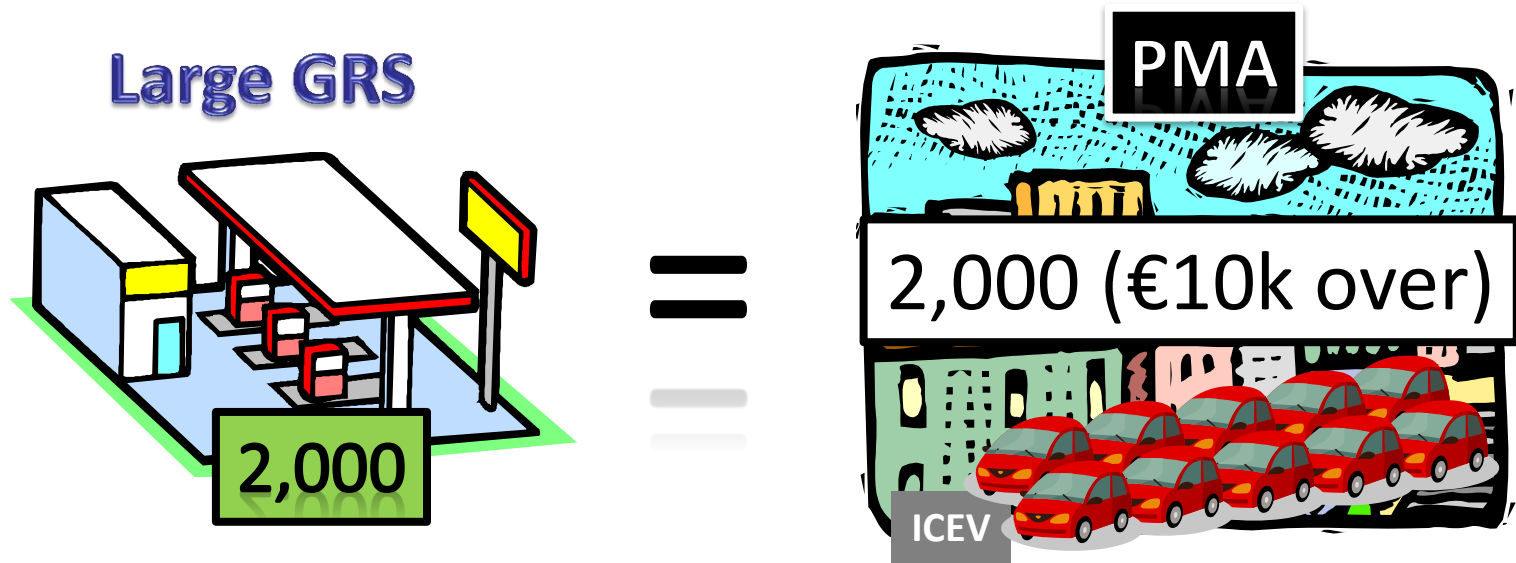
H2

100km → **about €10**

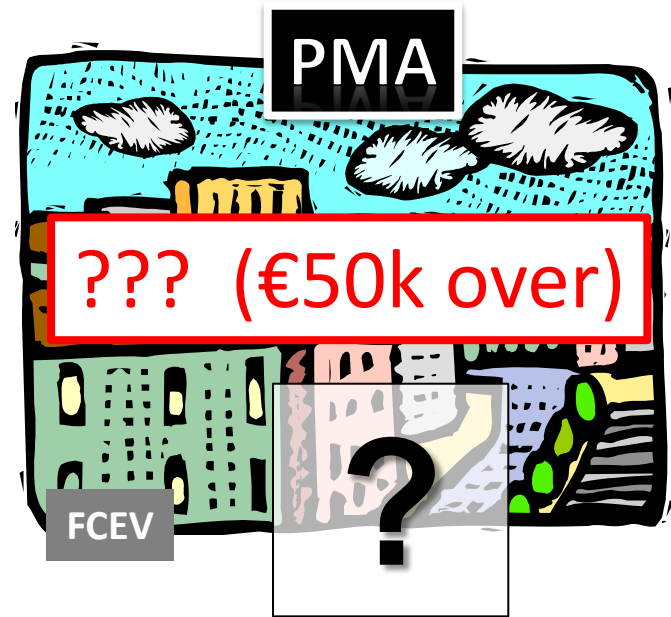
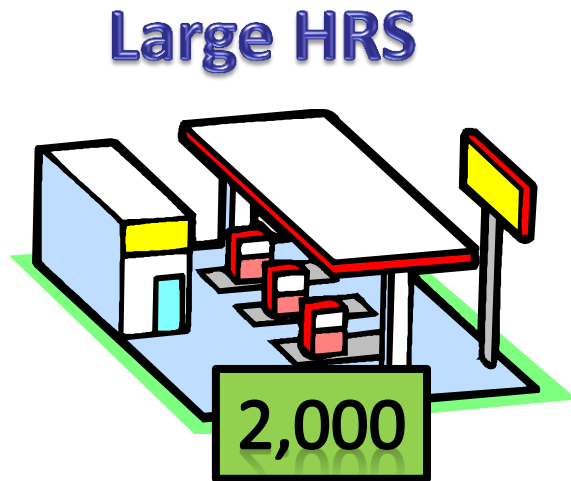


**Inherently,
Hydrogen Price can rise easier than Gasoline Price**

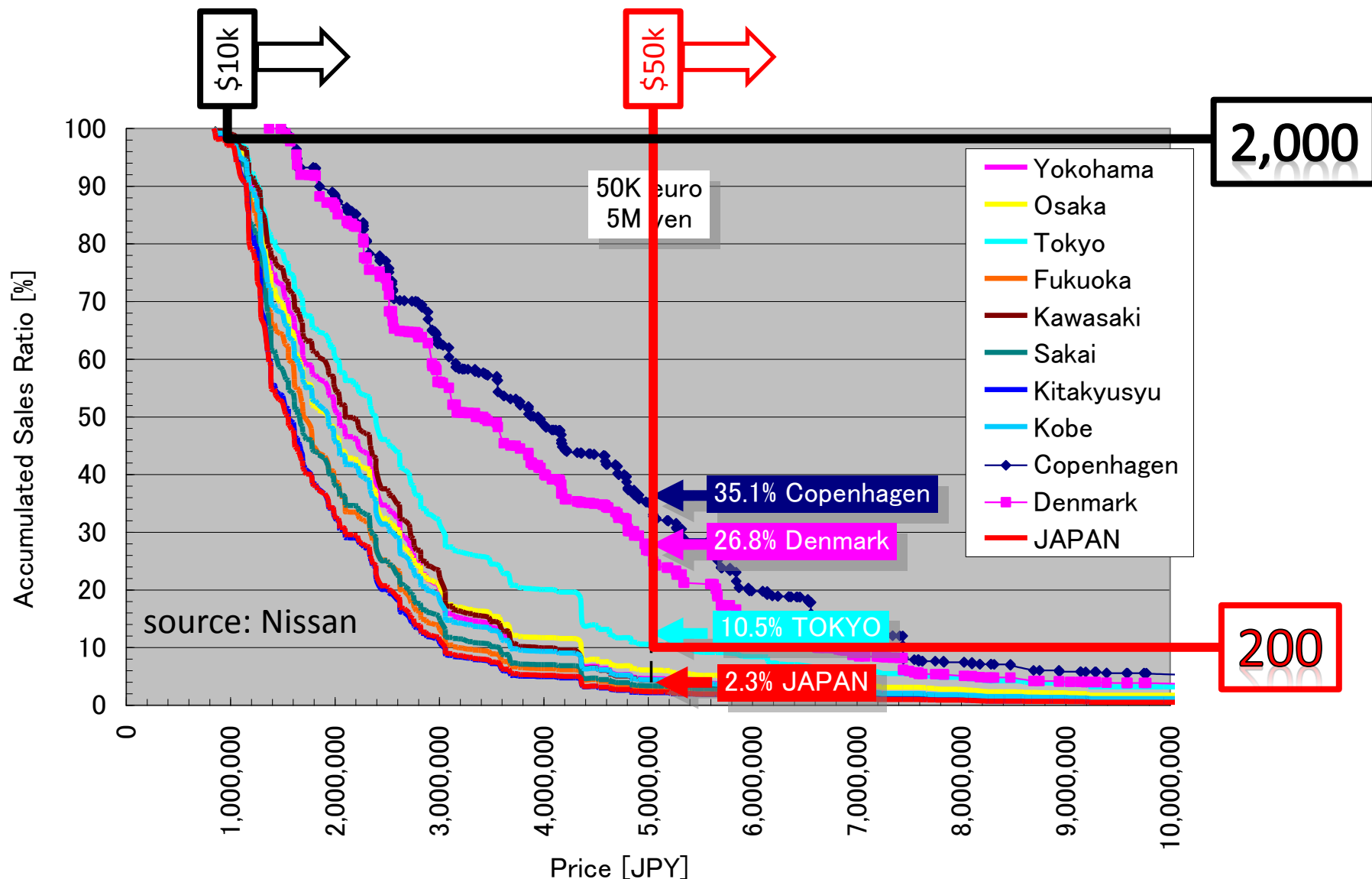
GRSs have 2,000 customers



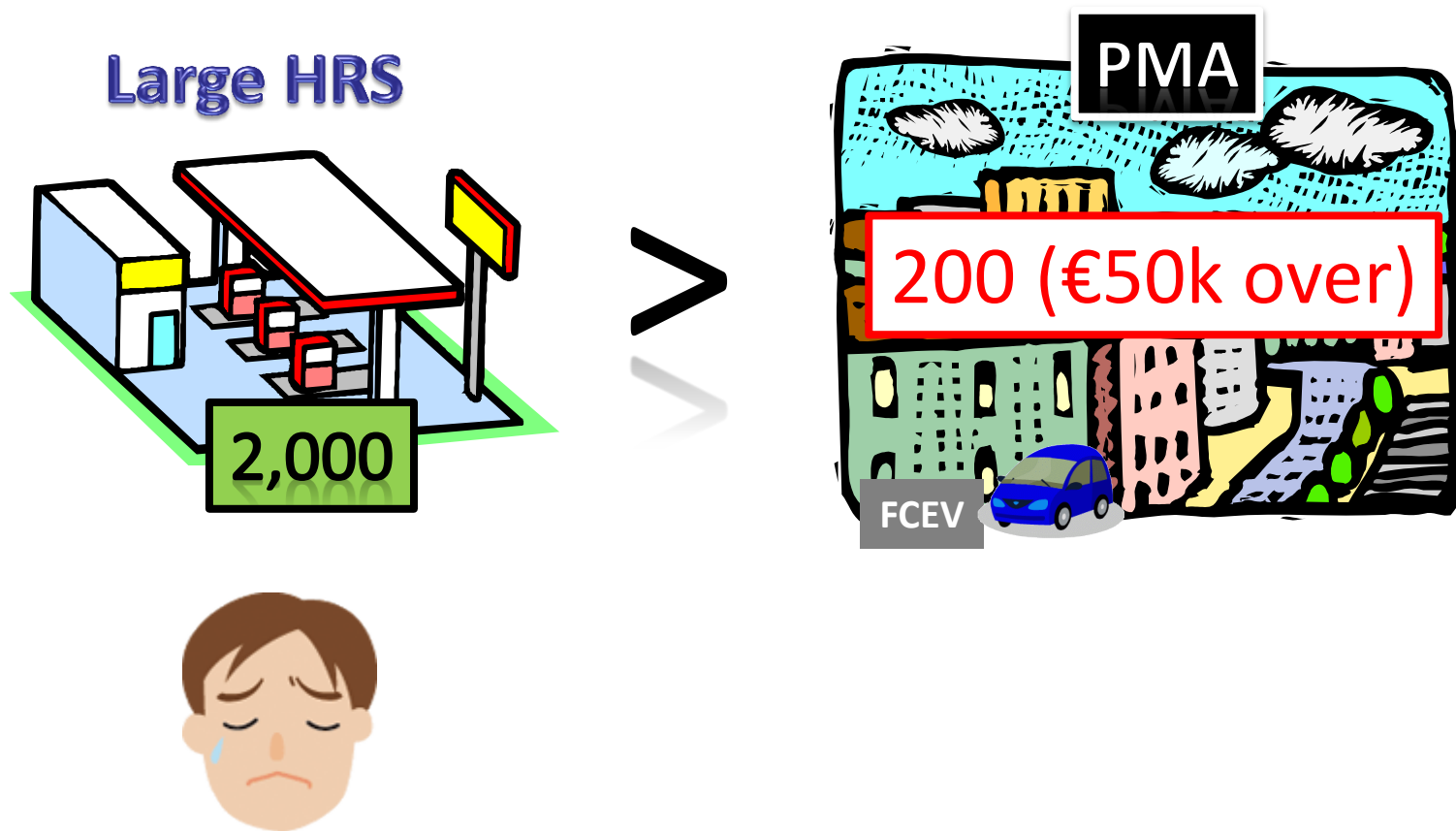
HRSs wish to have the same capacity



\$50k over customers in rich Tokyo



HRSs wish to have the same capacity?



Calculated rising cost of H2

Passenger Vehicles (PVs)

- 1) Required PVs to sustain a standard HRS (300Nm³/h)
- 2) Total PVs (\$50k, ASR10.5% in Tokyo)
- 3) New PVs (car cycle 11.67years in Japan)
- 4) Average PVs ($\Sigma 17i \div 5 = 60$)

2,000
200/car cycle
17/year
45

H2 Price Volatility [= 33% + 66% x (2,000 / 45)] -100%

2,866%

H2 Price
Volatility
is 2,866%
in
Early
Business
Years

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H2 Price Volatility [= 33% + 66% x (2,000 / 45)] -100%]

2,866%

H2 Price
Volatility
is 2,866%
in
Early
Business
Years

Commercial Vehicles (CVs)

- 1) Required CVs to sustain a professional depot (arbitrary)
- 2) Total CVs (\$50k, as planned)
- 3) New CVs (as planned)
- 4) Average CVs (as planned)

20
20
20/at once
20

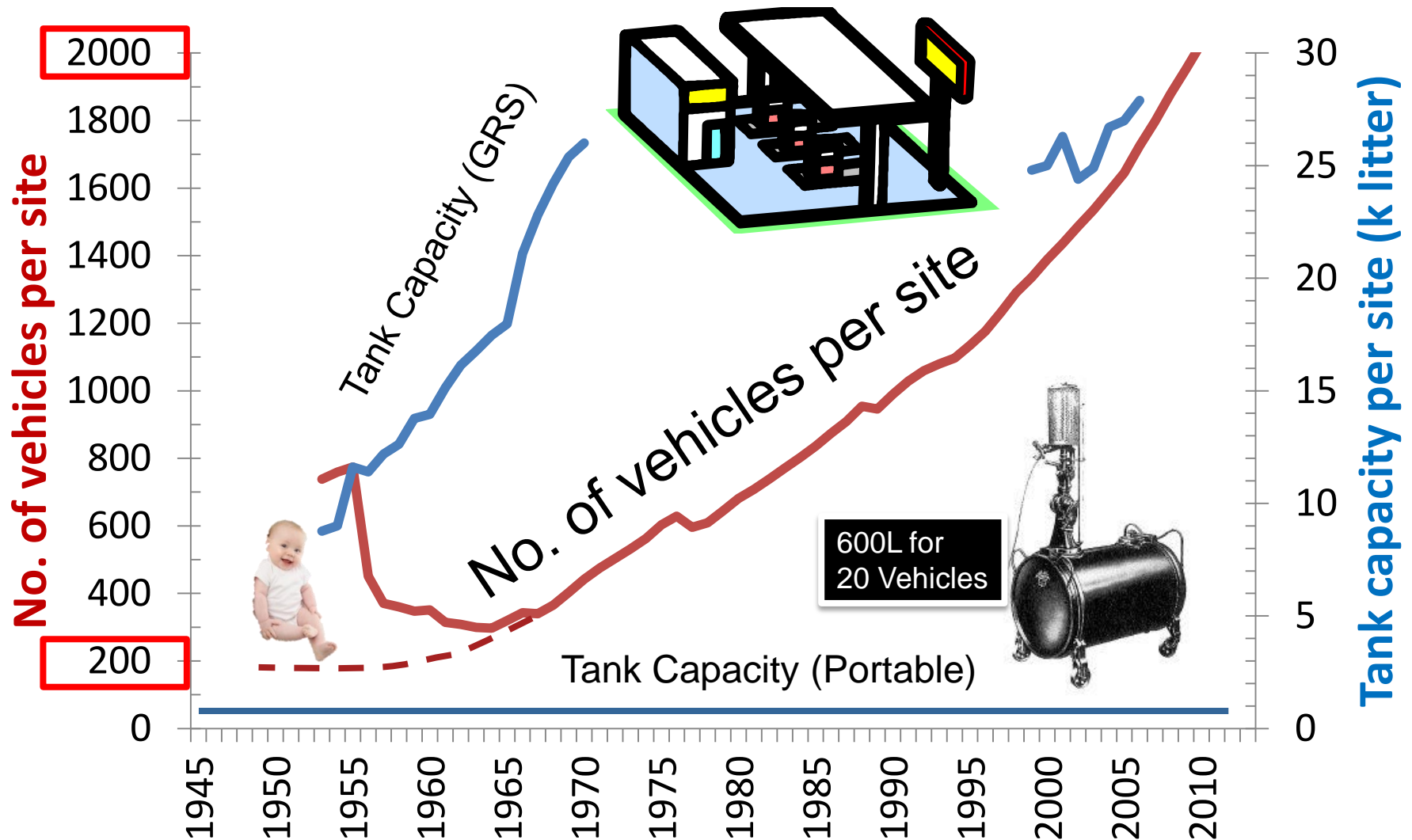
H2 Price Volatility [= 33% + 66% x (20 / 20)] -100%]

0%

H2 Price
Volatility
Is 0%
in
Early
Business
Years

Learn from Gasoline History

Historical No. of vehicles per site



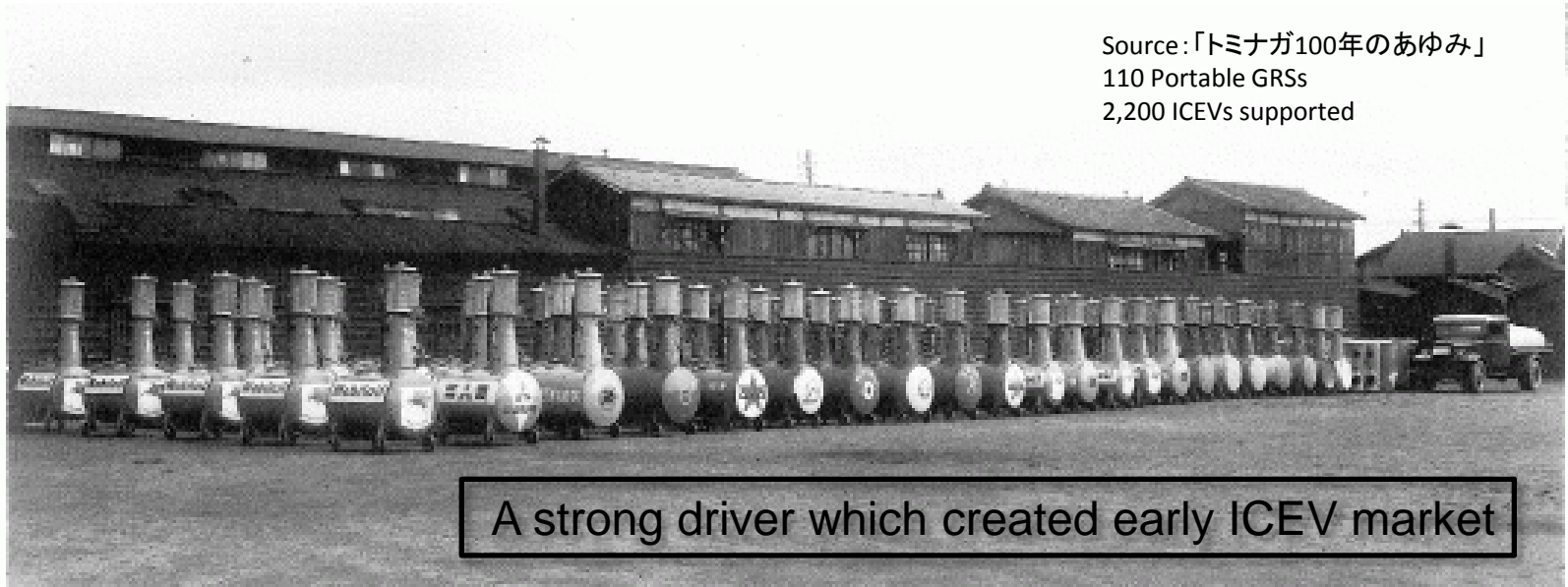
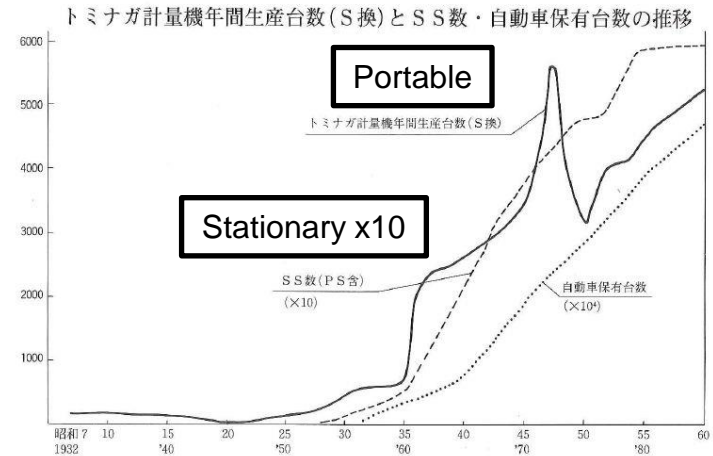
What is Portable

■ 20 ICEVs per portable GRS

- 600L tank capacity
- 380L refill x 52 weeks

■ Significant annual production

- Portable 3,000 (1970)
- Stationary 2,400 (1970)



Source:「トミナガ100年のあゆみ」
110 Portable GRSs
2,200 ICEVs supported

A strong driver which created early ICEV market

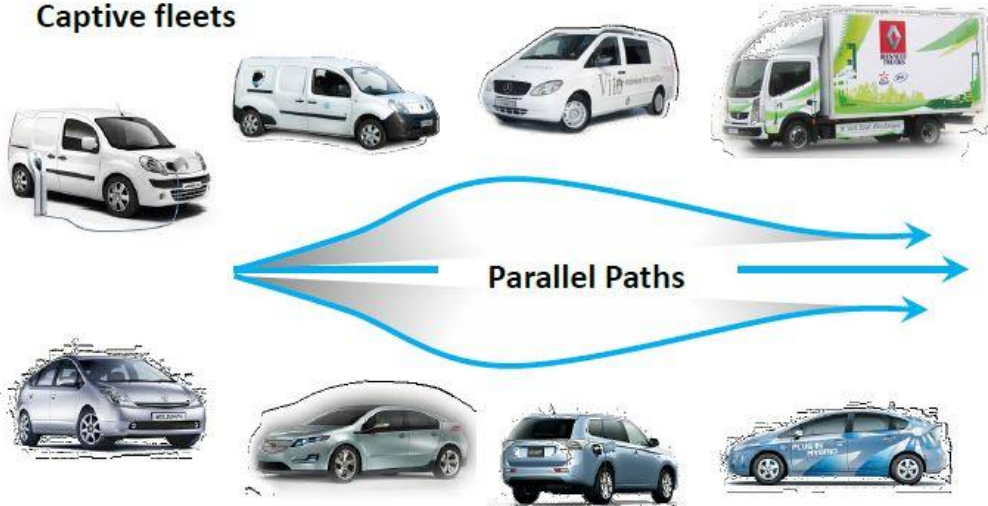
元売各社向けの㊟ (ポータブル) 計量機 (昭和26年)

Social Science Team: Recommendation to the board

Nissan should support “De-risk” ideas in H2 Mobility France

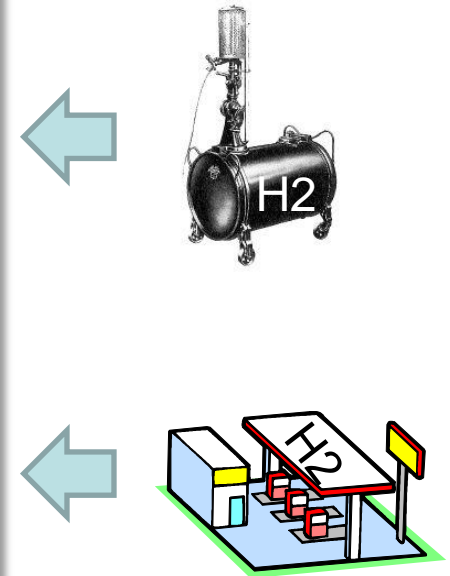
1) FC Commercial vehicles Lower Risk, but Small market

Captive fleets

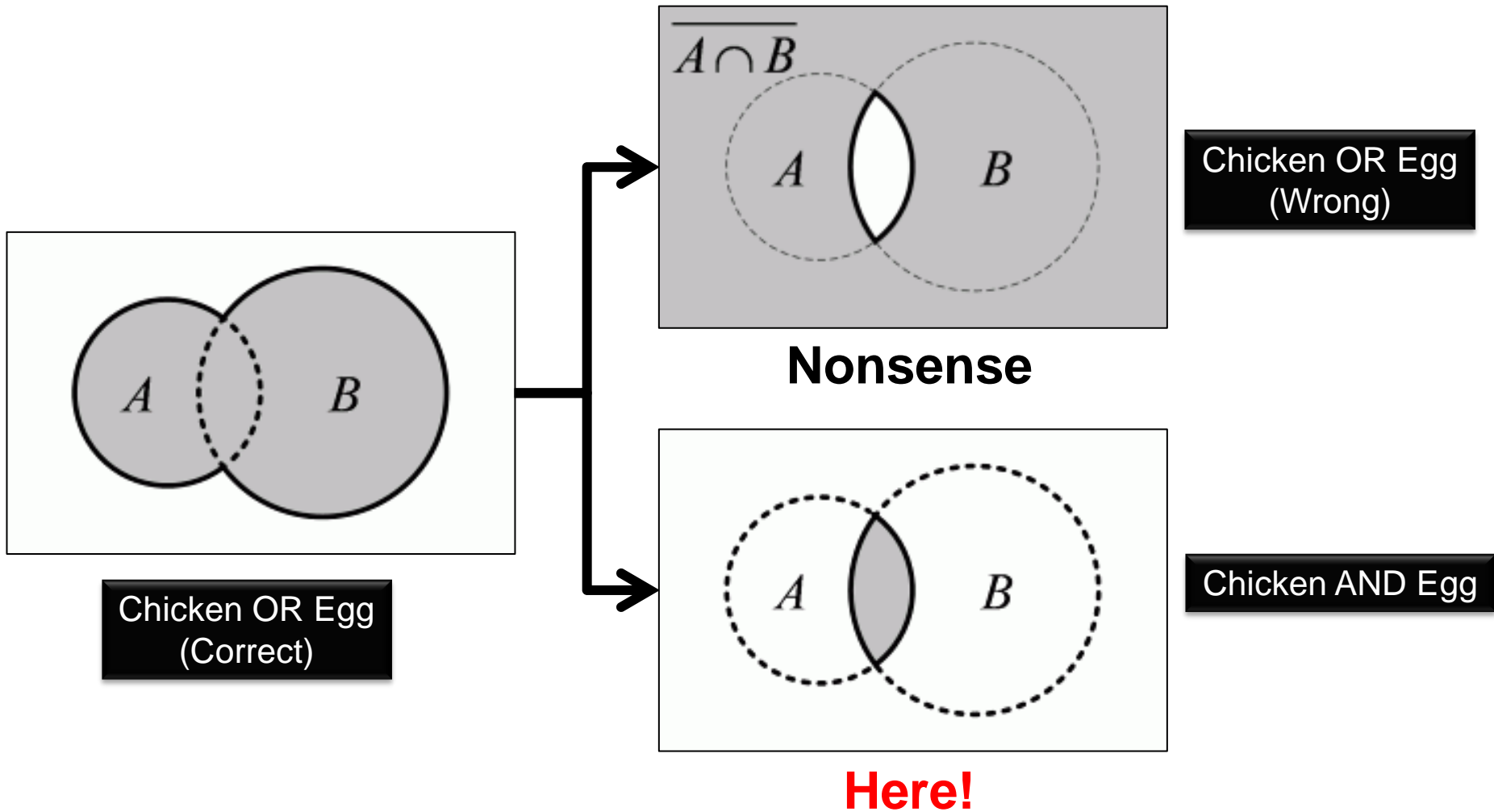


2) FC Passenger vehicles Higher Risk, but Large market

15



Where is “business” ?



4 Essential Conditions

Mission

- ✓ FC Supply-Chain (Nissan)
- ✓ FC Manufacturing (Nissan)
- ✓ HRSs (Partner)
- ✓ Customers (All)



Thank you for your attention