

Solar Powered PRT



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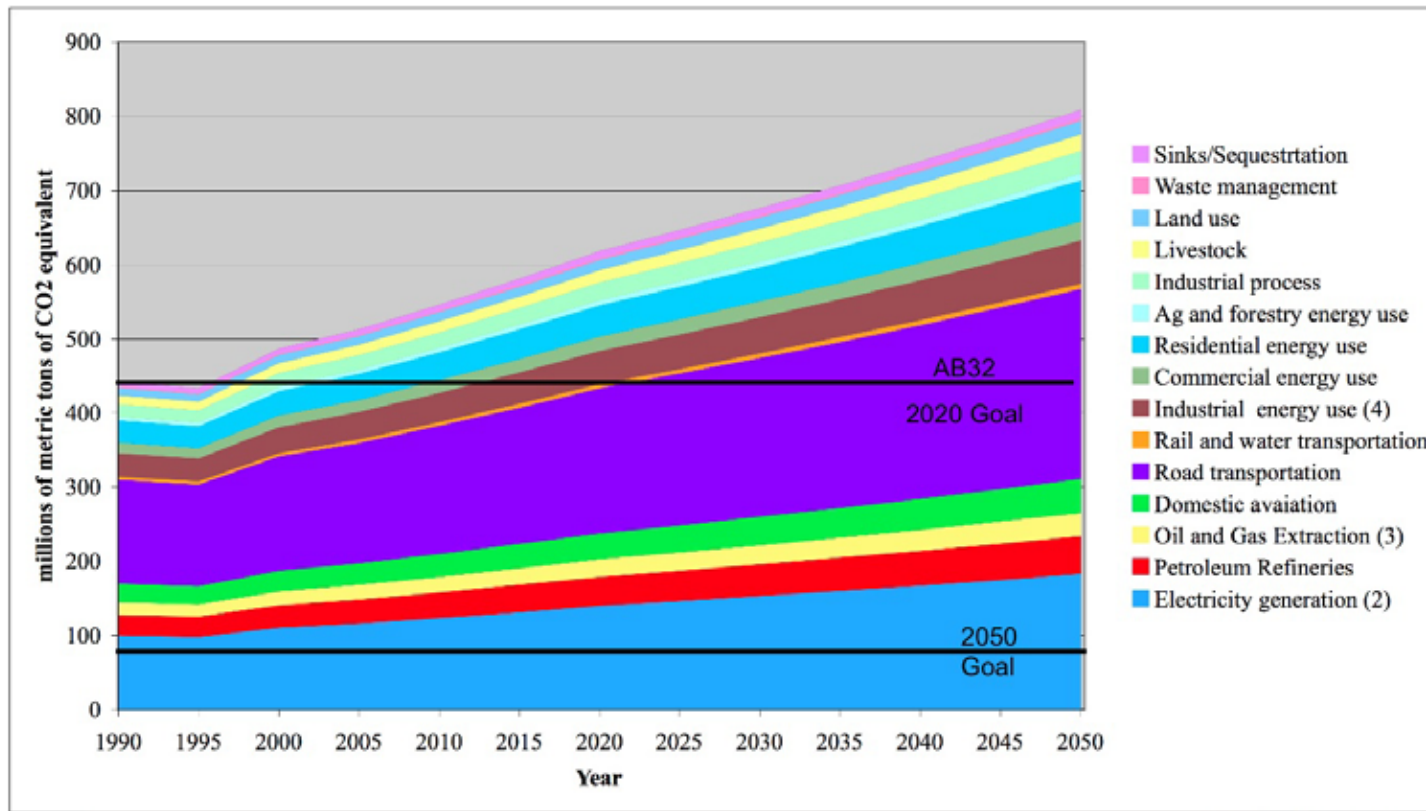
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Are cars our future?

2% growth in VMT = double the traffic in 30 years



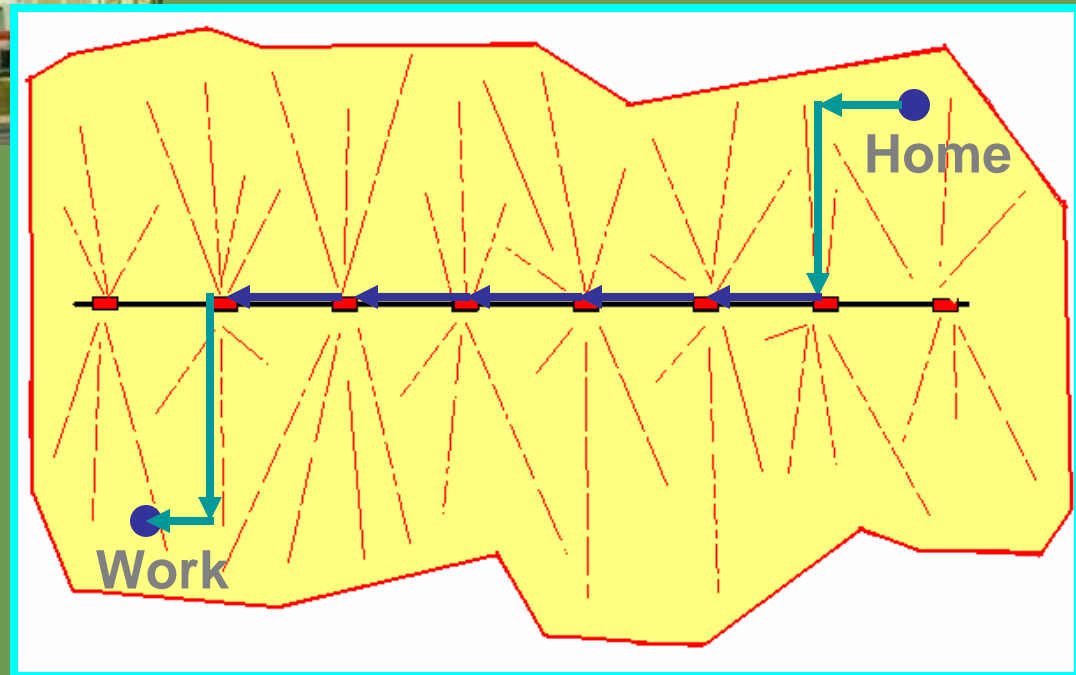
California's GHG reduction goals



Rail & Buses As A Solution?



Riders Have to Change Modes, Wait For Departures and Stop At EVERY Stop on the Route



Only 2-3% of the public uses this “solution”

What about Hybrids, Electric Cars & Biofuel?

**Incremental Improvement to
Automobiles Is Not Going To Work**

Why?

Infinitely Low Cost Fuel = Infinite Congestion

What is Personal Rapid Transit?

Small Automated Personal Vehicles

Elevated Guideways

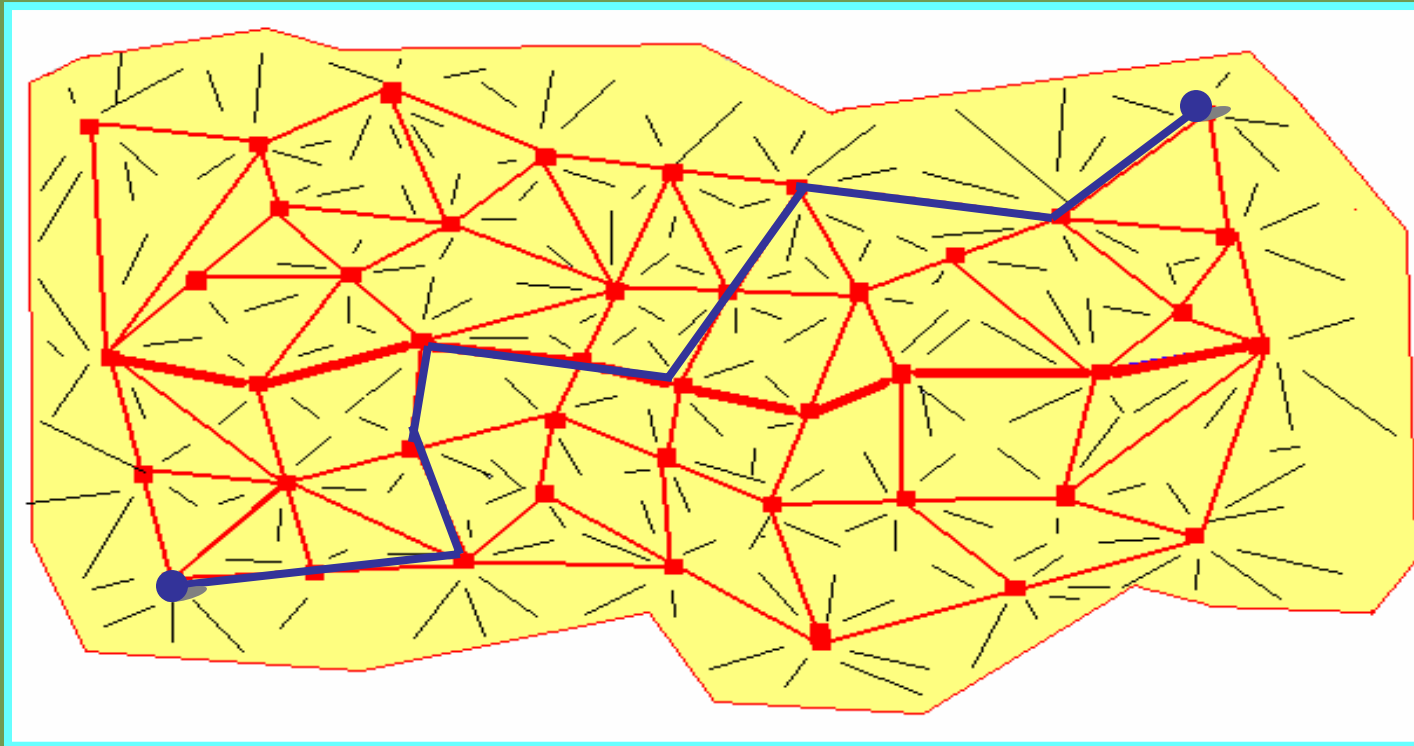
On-Demand Access at Off-Line Stations

Non-Stop, Point-to-Point Service

PRT Architecture

Like Interstate Highways you ride non-stop in a personal vehicle traveling on a guideway “lane” anywhere in the network.

Physical Internet for People



Average 5 minute walk to any urban portal.

First Generation PRT

Morgantown, West Virginia



8.7 mile system operated for over 30 years

Over 63 million passengers since 1972. Handles 15,000 people per day with a peak of 30,000.

Unblemished safety record. No serious accidents.

Availability rate above 98.5%.

Types of PRT systems

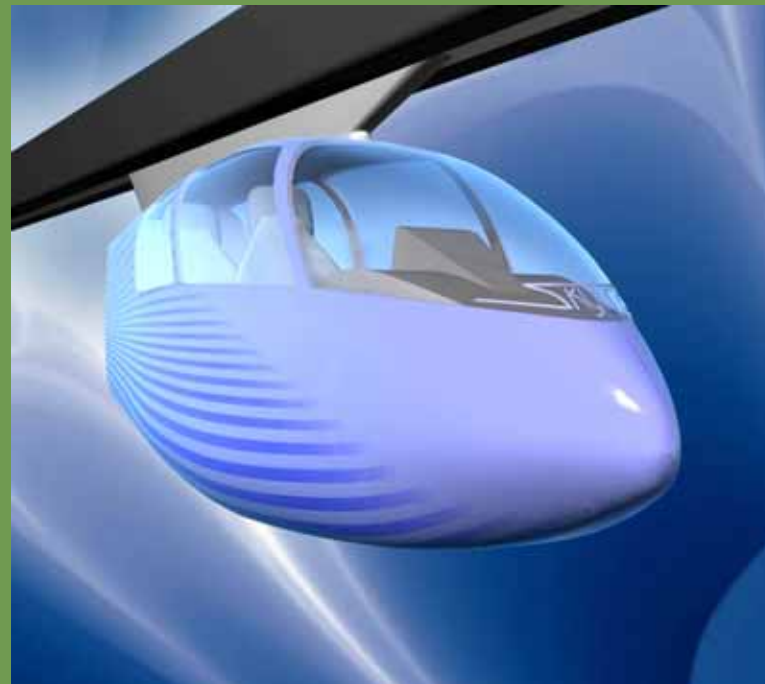
Second Generation

- Wheeled System
- Low speed 40 mph



Third Generation

- Magnetic Levitation
- High Speed 100 mph



Solar PRT energy use



- 2-3kw continuous power at speed
- 50-75 watt hours per mile in PRT
- 250 watt hours per mile in PHEV / EV

\$4 gas helps Prius more than PHEV

	Gasoline + Elec.	Energy cost	5 year Savings	10 year Savings
19 mpg US 2005	601 gal	\$2400	\$0	\$0
45 mpg hybrid	266 gal	\$1060	\$3,700	\$10,400
100 mpg PHEV	12 gal + 2500 kwh	\$48 + \$375	(-\$2,000)	\$5,000
EV	3000 kwh	\$450	(-\$18,250)	(-\$11,500)

Assumptions: 12,000 mi/yr, 250 wh/mile, 30 mile phev
\$0.15 per kwh, \$4 gallon gasoline

Cost in California

*does not include refining or highway maintenance

Vehicle Type	Meets AB32 goal	Watt hours per mile	20 year cost
25 mpg gasoline car	No	1500*	\$1,000B
50 mpg hybrid	No	750*	\$720B
40' bus (25 pass.)	No	673*	?
100 mpg Plug-in hybrid	No	375**	\$680B
Fully Electric	Yes	200**	\$900B?
London Underground		170	N/a
Maglev PRT (500k miles)	Yes	50**	\$550B

**estimated

US\$ leaving california

Vehicle cost + Fuel

Vehicle Type	Meets AB32 goal	1 year	20 year
25 mpg gasoline car	No	\$40B	\$800B
50 mpg hybrid	No	\$35B	\$700B
40' bus (25 pass.)	No	\$20B	\$400B
100 mpg Plug-in hybrid	No	\$34B	\$680B
Fully Electric	Yes	?	?
BART type rail system	Yes	>\$1T	>\$10T
Maglev PRT (500k miles)	Yes	\$0B	\$0B

**estimated

6.9 m metric tons CO2 emission reductions

- All US public transit (APTA/SAIC report)
- 500 miles of PRT on interstate highways
- 13,000 miles of PRT on arterials

Can PRT handle the demand?

Light Rail with 200 passengers
running every 5 minutes = 4000 pph

PRT with 2 passengers @ 1 second
headway = 7200 pph

Each lane of highway handles 4000
pph with 2 passengers per car.

Questions?



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