

Solar at the cost of coal

$$\text{Flux} = 1366 \text{ W/m}^2$$

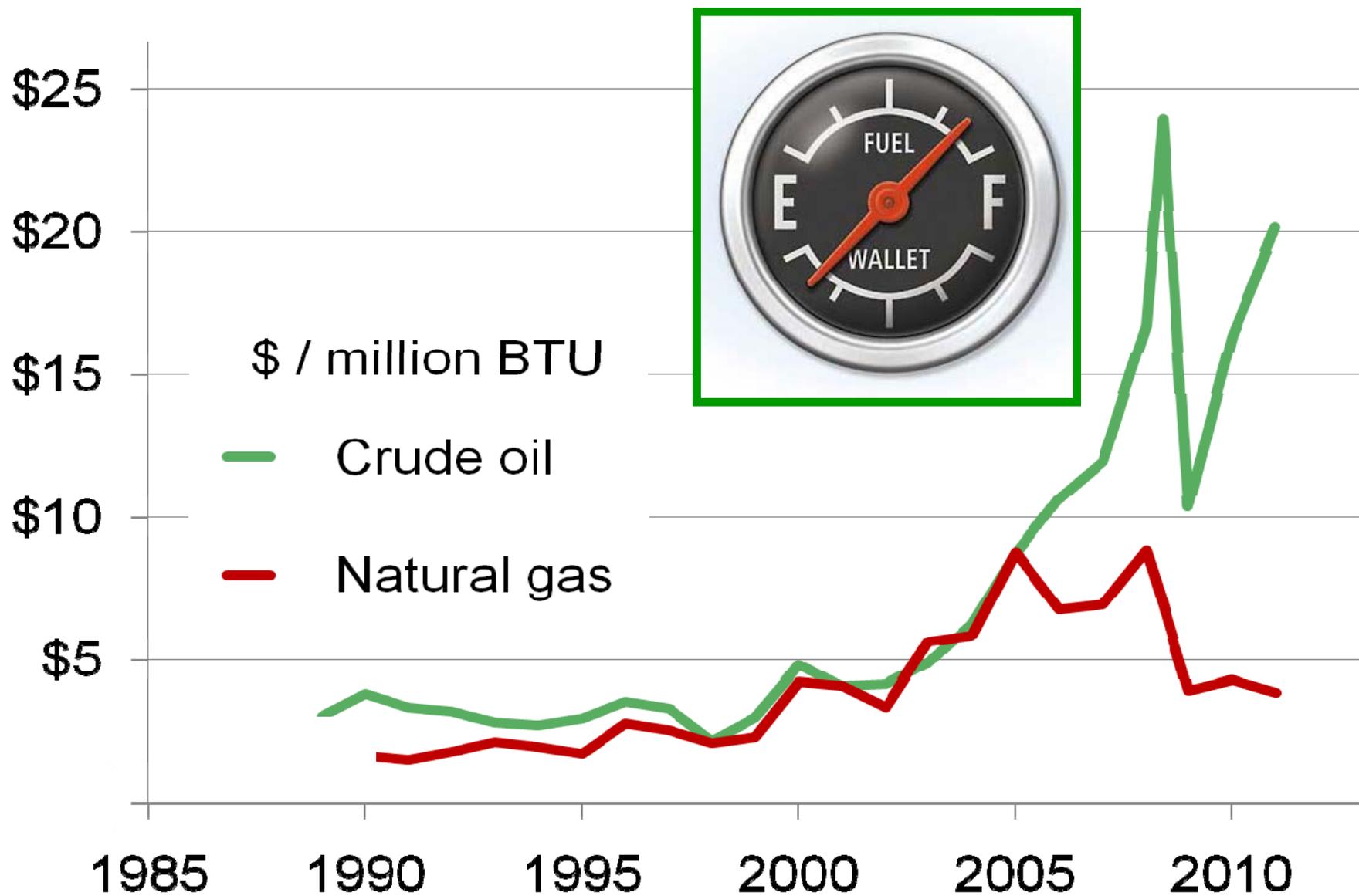


Domestic shale gas



Source: Energy Information Administration based on data from various published studies

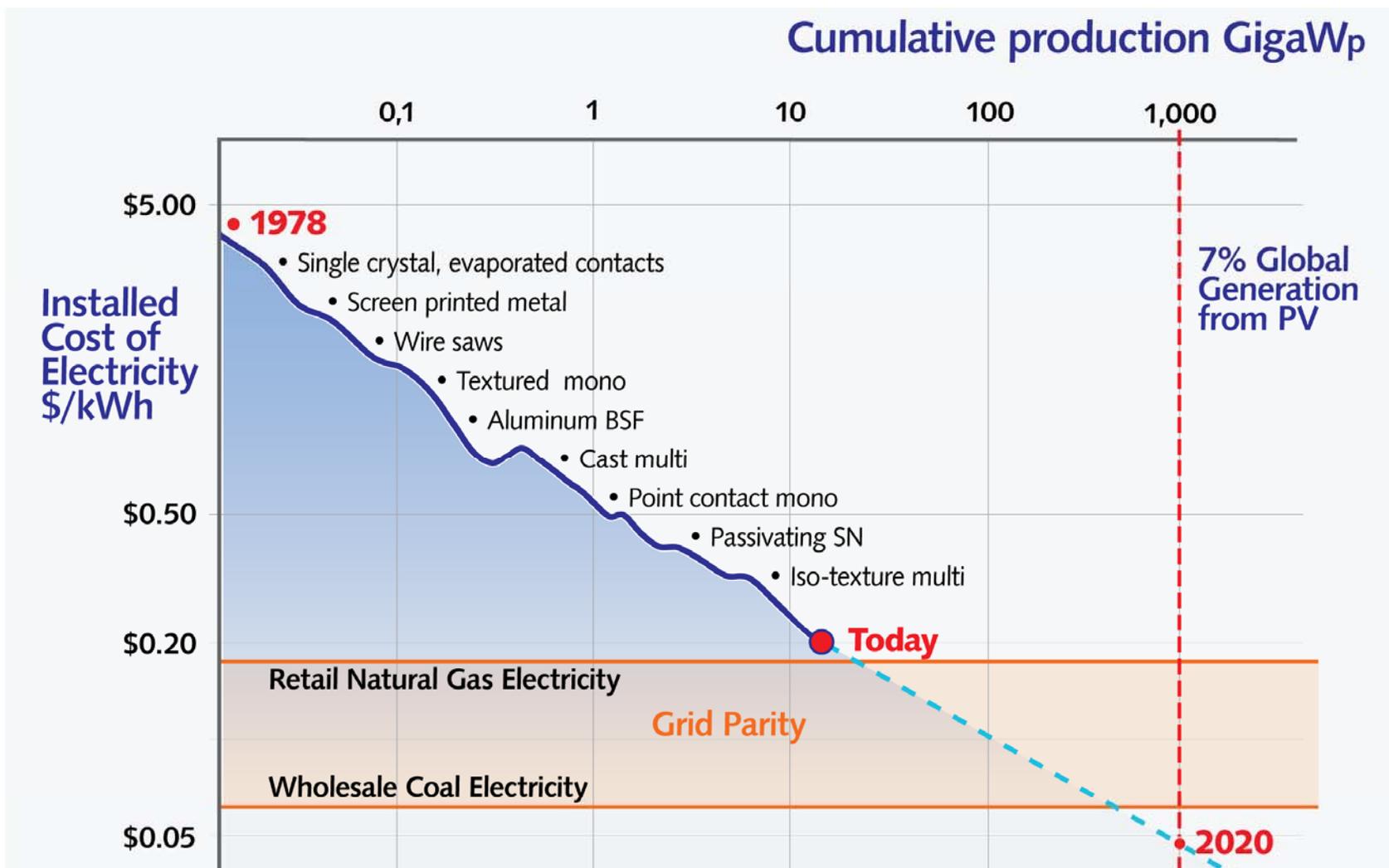
US shale gas enables solar



SunShot: towards \$1 / Watt



Silicon PV can reach coal parity

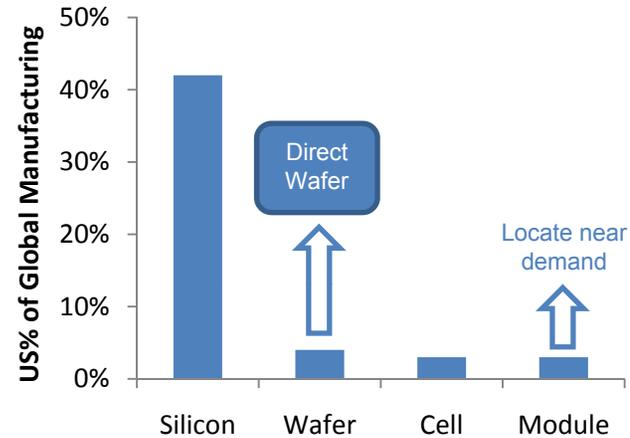
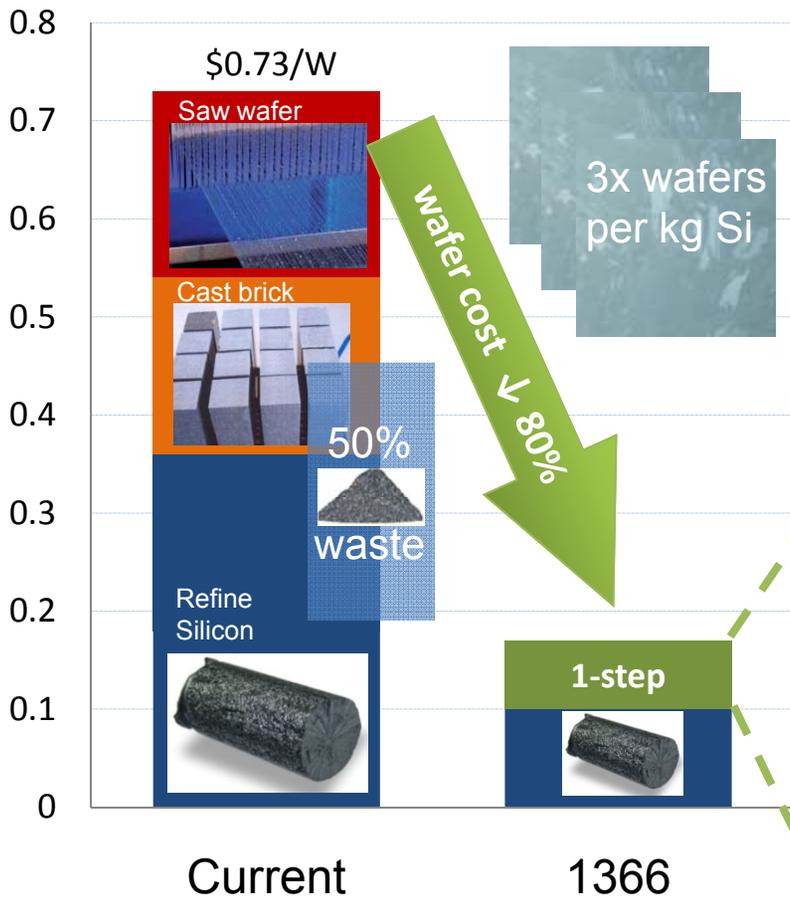


*LCOE calculated assuming 5.75kWh/m²/day (17% capacity factor), a 7% discount rate, and a 30-year project life.



Solar at the cost of coal

Half of PV manufacturing cost is making wafers, but currently wasteful and slow



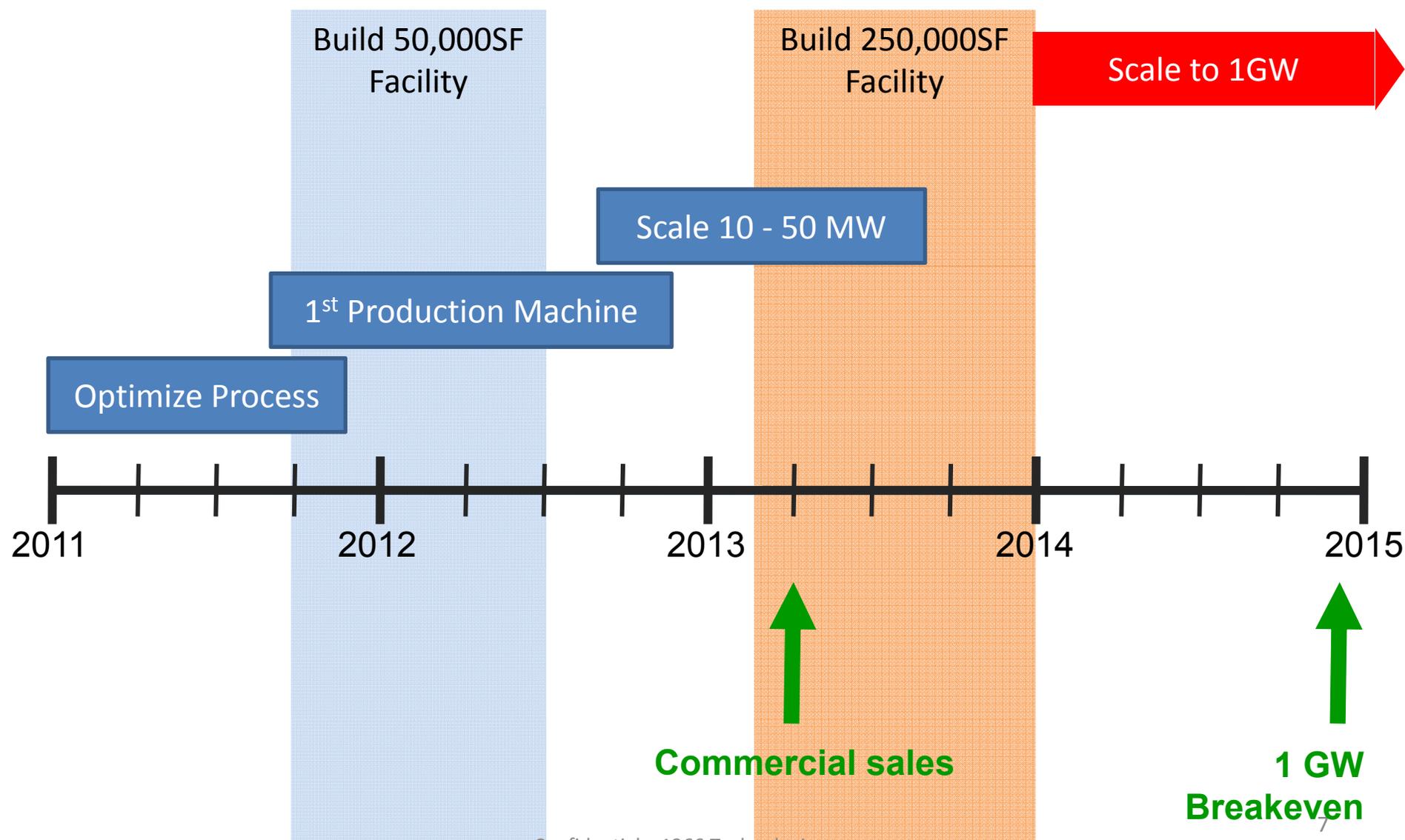
Direct Wafer

Rapid solidification directly from silicon melt

Drop in replacement Scales quickly High efficiency (20%)



Path to 1GW Manufacturing



US versus Asia

Leave

- Tax
- Market access
- Inexpensive loans
- Lax environ. regs.
- Low cost suppliers
- Labor rates

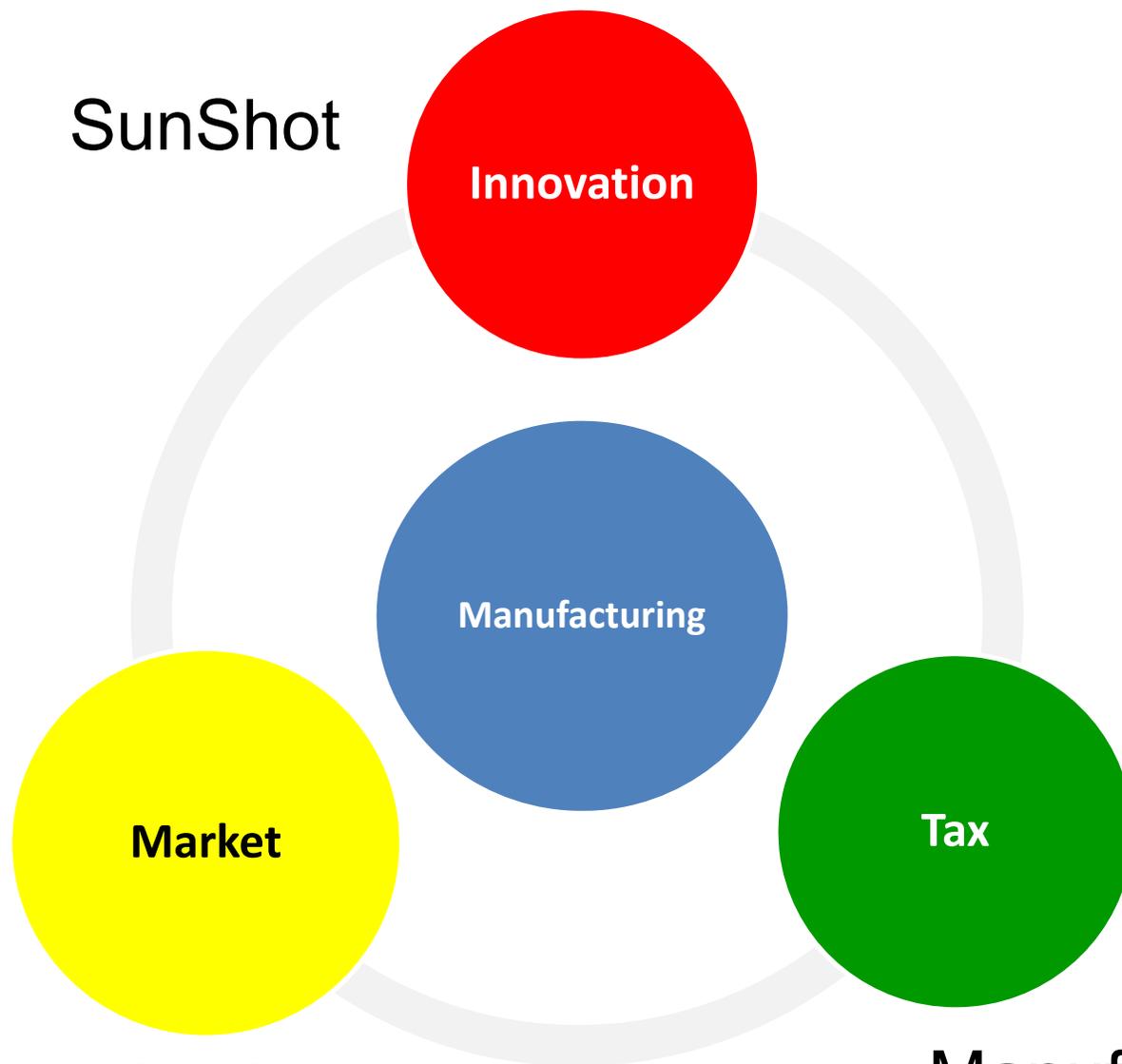
Stay

- IP Risk
- Country risk
- Logistics
- Access to Equity
- Inexpensive Power

US versus Asia

1GW Plant				
	Amount	% Sales	Amount	% Sales
Sales	\$400M		\$400M	
Cost Drivers				
Taxes	↓ \$15M-\$30M	4%-7%	\$0M	0%
Labor	↓ \$18M	5%	\$9M	2%
Power	↑ \$3M	1%	\$6M	2%
Gov Loan	↑ -\$10M ?	-3% ?	\$0M	0%
LOCATION COST DRIVERS	\$26M-\$41M	7%-10%	\$15M	4%-12%

SunShot



Innovation

Manufacturing

Market

Tax

Stimulate adoption
Remove barriers

Manufacturing ↓
Carbon ↑

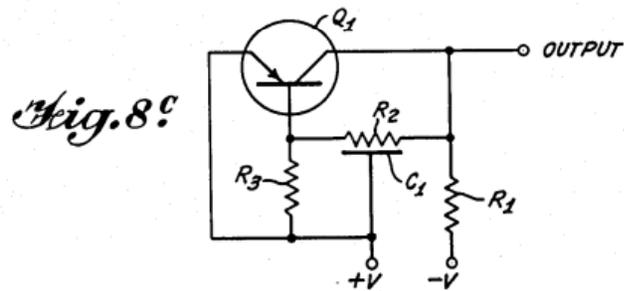
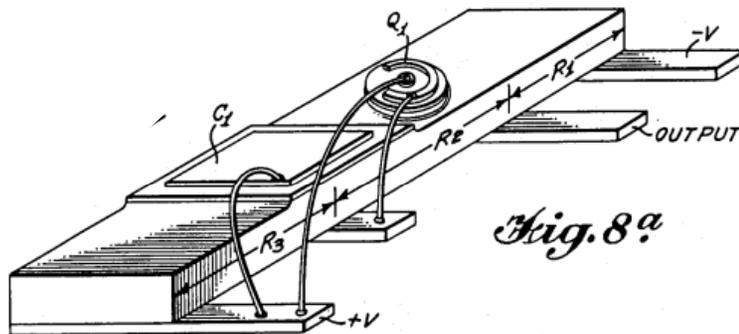
A prize worth having !

June 23, 1964

J. S. KILBY

3,138,743

MINIATURIZED ELECTRONIC CIRCUITS



1 Terawatt PV

**>10 million
Jobs**

