

# Solar Energy Business Developments

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KYOCERA CORPORATION**

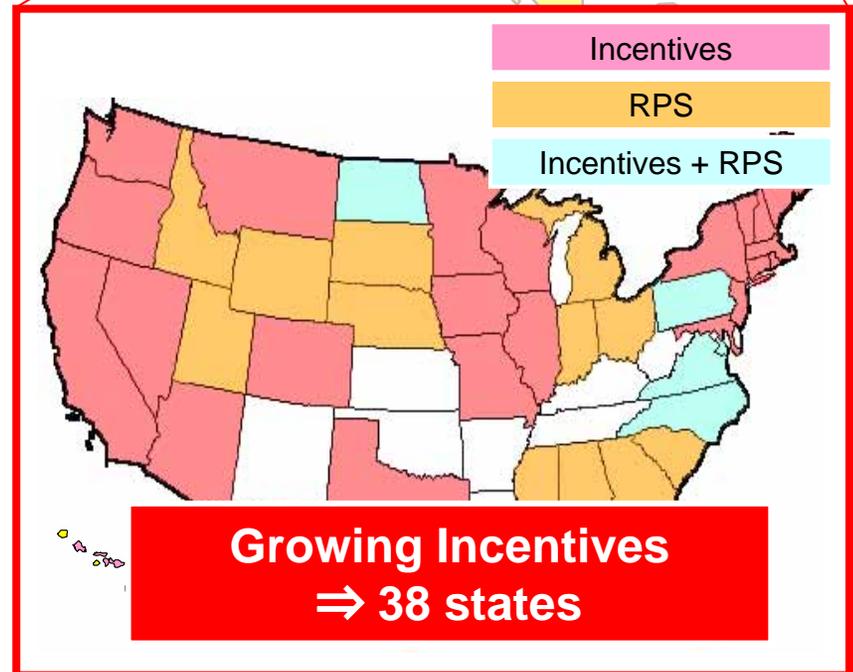
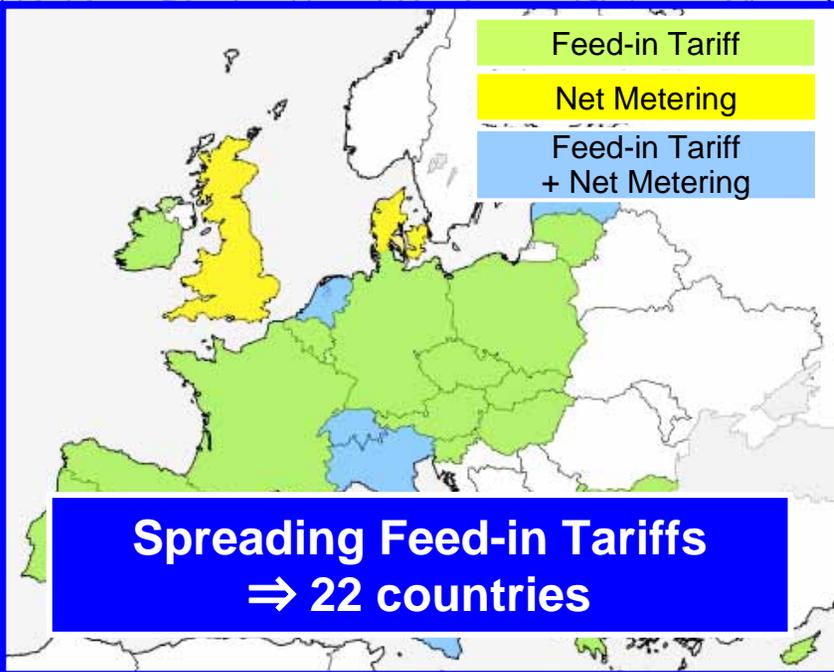
# Forward-Looking Statements

Certain of the statements made in this document are forward-looking statements (within the meaning of Section 21E of the U.S. Securities and Exchange Act of 1934), which are based on our current assumptions and beliefs in light of the information currently available to us. These forward-looking statements involve known and unknown risks, uncertainties and other factors. Such risks, uncertainties and other factors include, but are not limited to: general economic conditions in our markets, which are primarily Japan, North America, Europe and Asia, particularly China; unexpected changes in economic, political and legal conditions in China; our ability to develop, launch and produce innovative products, including meeting quality and delivery standards, and our ability to otherwise meet the advancing technological requirements of our customers, particularly in the highly competitive markets for ceramics, semiconductor parts and electronic components; manufacturing delays or defects resulting from outsourcing or internal manufacturing processes which may adversely affect our production yields and operating results; factors that may affect our exports, including a strong yen, political and economic instability, difficulties in collection of accounts receivable, decrease in cost competitiveness of our products, increases in shipping and handling costs, difficulty in staffing and managing international operations and inadequate protection of our intellectual property; changes in exchange rates, particularly between the yen and the U.S. dollar and euro, respectively, in which we make significant sales; inability to secure skilled employees, particularly engineering and technical personnel; insufficient protection of our trade secrets and patents; our continuing to hold licenses to manufacture and sell certain of our products; the possibility that future initiatives and in-process research and development may not produce the desired results; the possibility that companies or assets acquired by us may require more cost than expected for integration, and may not produce the returns or benefits, or bring in business opportunities, which we expect; events that may impact negatively on our markets or supply chain, including terrorist acts and outbreaks of disease; the occurrence of natural disasters, such as earthquakes, in locations where our manufacturing and other key business facilities are located; the possibility of future tightening of environmental laws and regulations in Japan and other countries which may increase our environmental liability and compliance obligations; fluctuations in the value of, and impairment losses on, securities and other assets held by us; and changes in accounting principles. Such risks, uncertainties and other factors may cause our actual results, performance, achievements or financial position to be materially different from any future results, performance, achievements or financial position expressed or implied by these forward-looking statements. We undertake no obligation to publicly update any forward-looking statements included in this document.

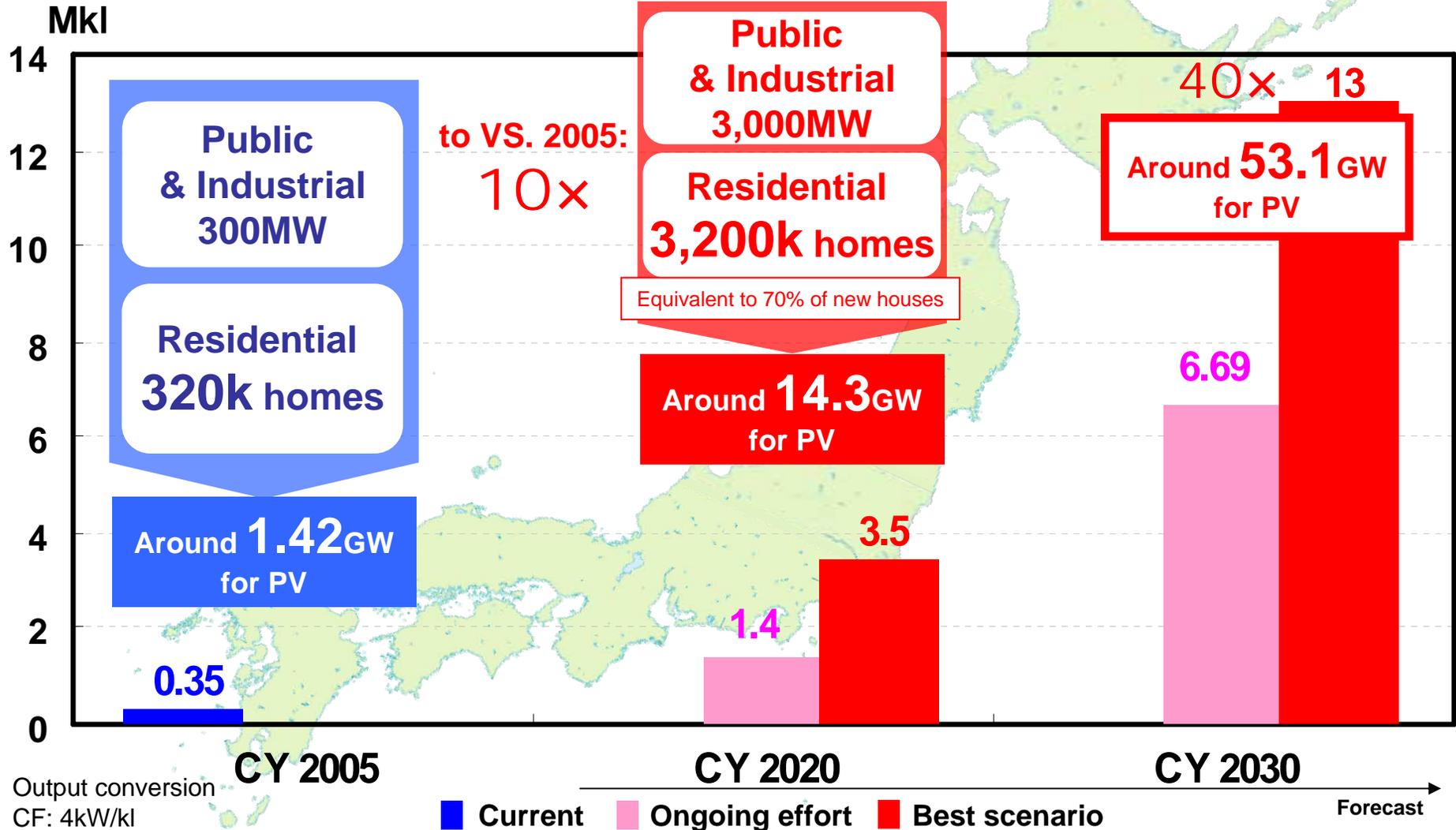
A scenic photograph of a sunset or sunrise over a mountain range. The sun is low on the horizon, creating a bright starburst effect and casting long, soft shadows across the sky. The mountains are silhouetted against the warm, orange and yellow light of the sky. The overall mood is serene and natural.

# PV Global Market Trend

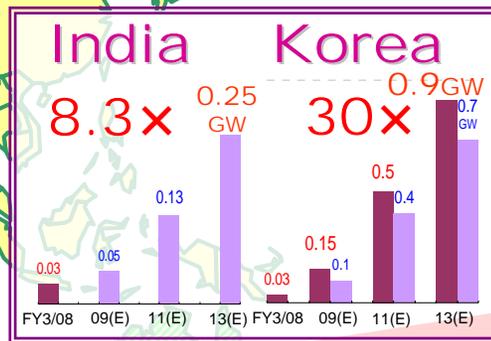
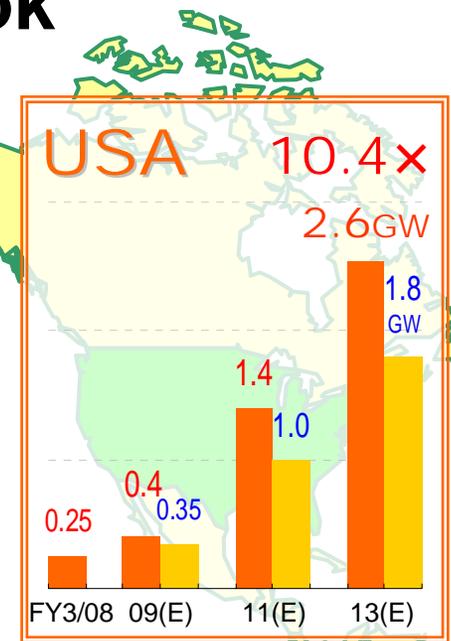
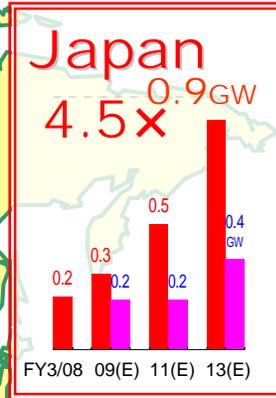
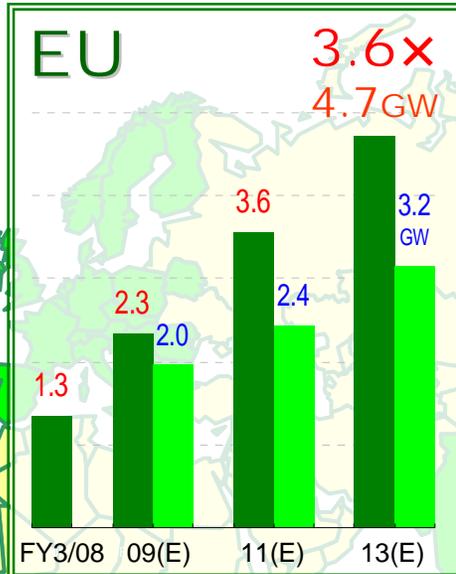
# Contribution of Subsidies to Expansion of European and U.S. Markets



# Toward the Realization of Low-Carbon Society of Japan Photovoltaics



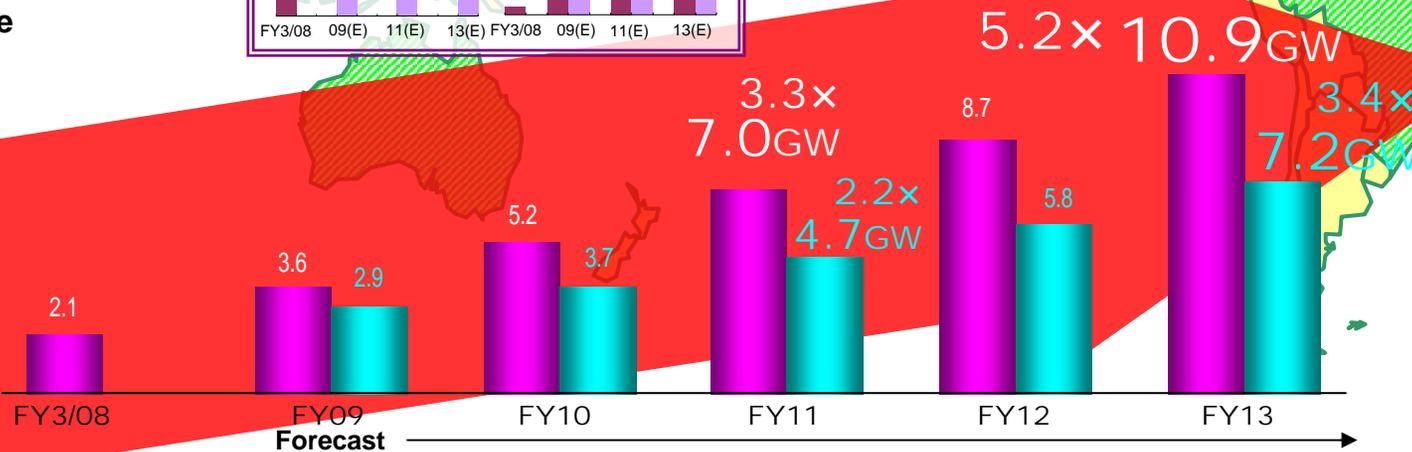
# Principal Market Outlook



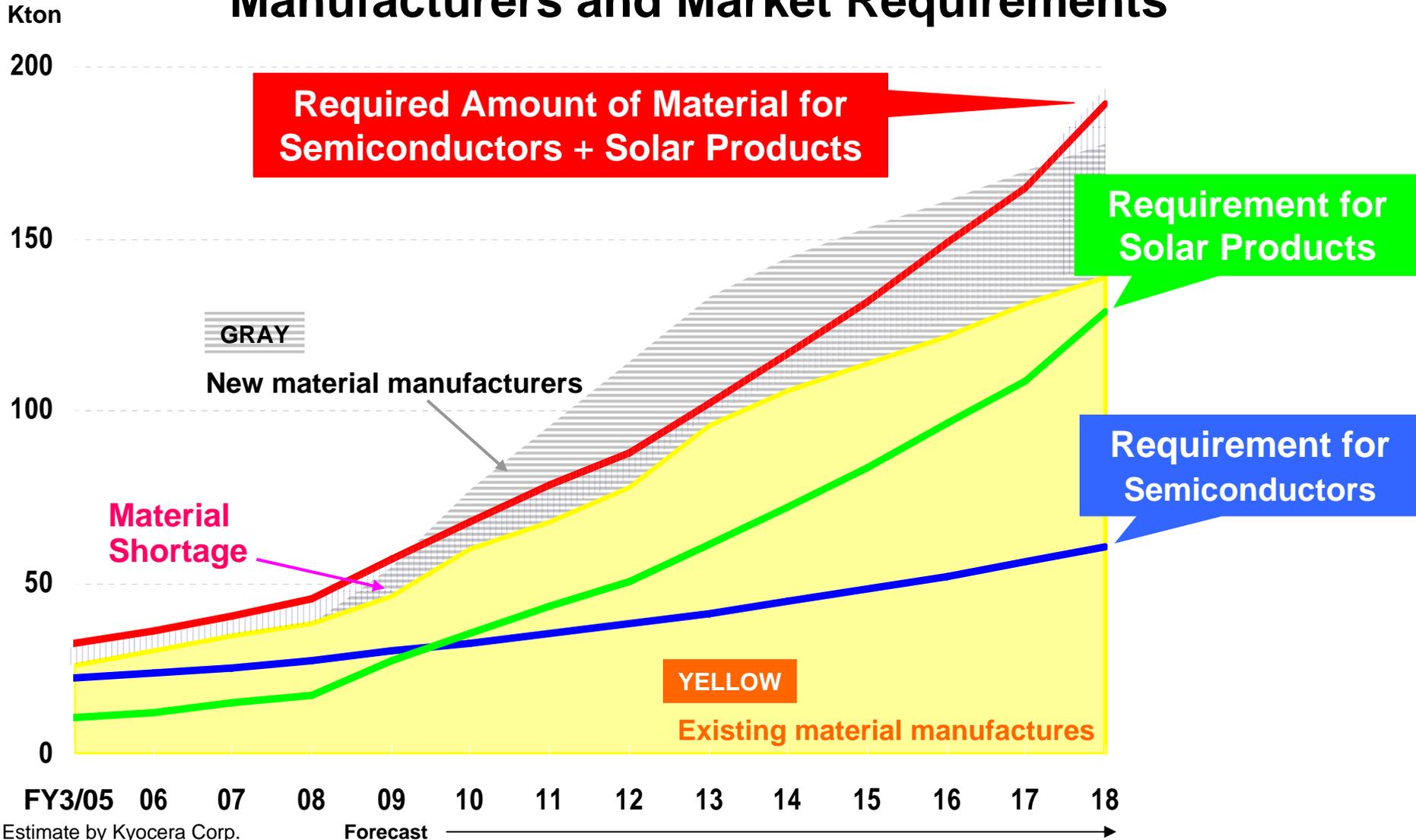
Left: Policy driven  
Right: Conservative

## World Market Size

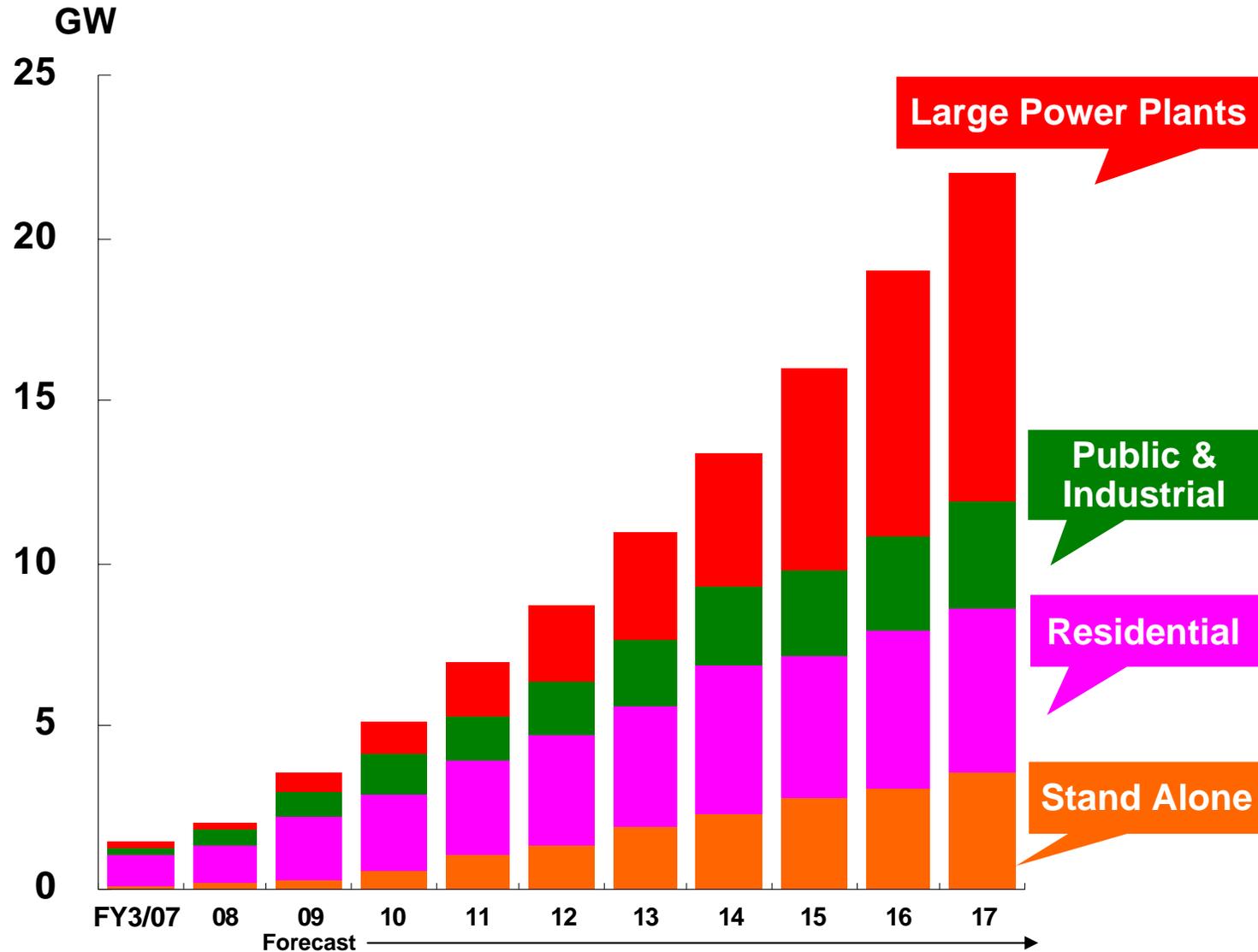
Estimate by Kyocera Corp.



# Comparison between Expansion Plans of Material Manufacturers and Market Requirements

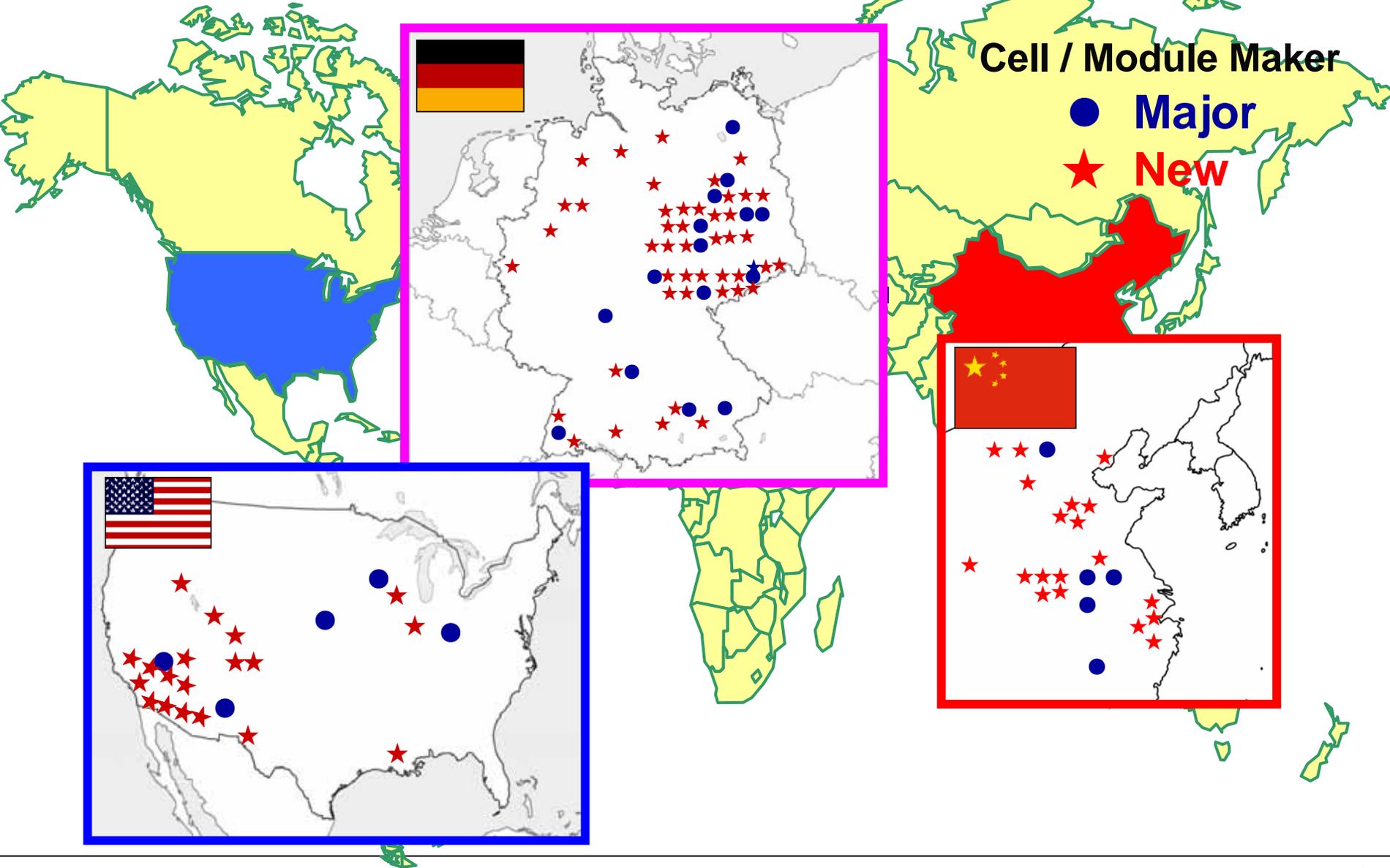


# Demand Forecast in Four Principal Markets



Estimate by Kyocera Corp.

# Overseas Solar Photovoltaic (PV) System Manufacturers



# Market Conditions: Overview

**Expansion of subsidy policies**

+

**Increase in production of material**

||

**Rapid increase in number of manufacturers**

Europe, US, Korea, etc.

⇒ **Continuous market growth**

Increase in production volume by existing manufacturers + new entrants

⇒ **Stabilization of supply and price**

> 300 Companies

**EEG\* in Germany: reexamination of buyback price of feed-in tariff  
annual decrease rate 5% ⇒ 8~10%**

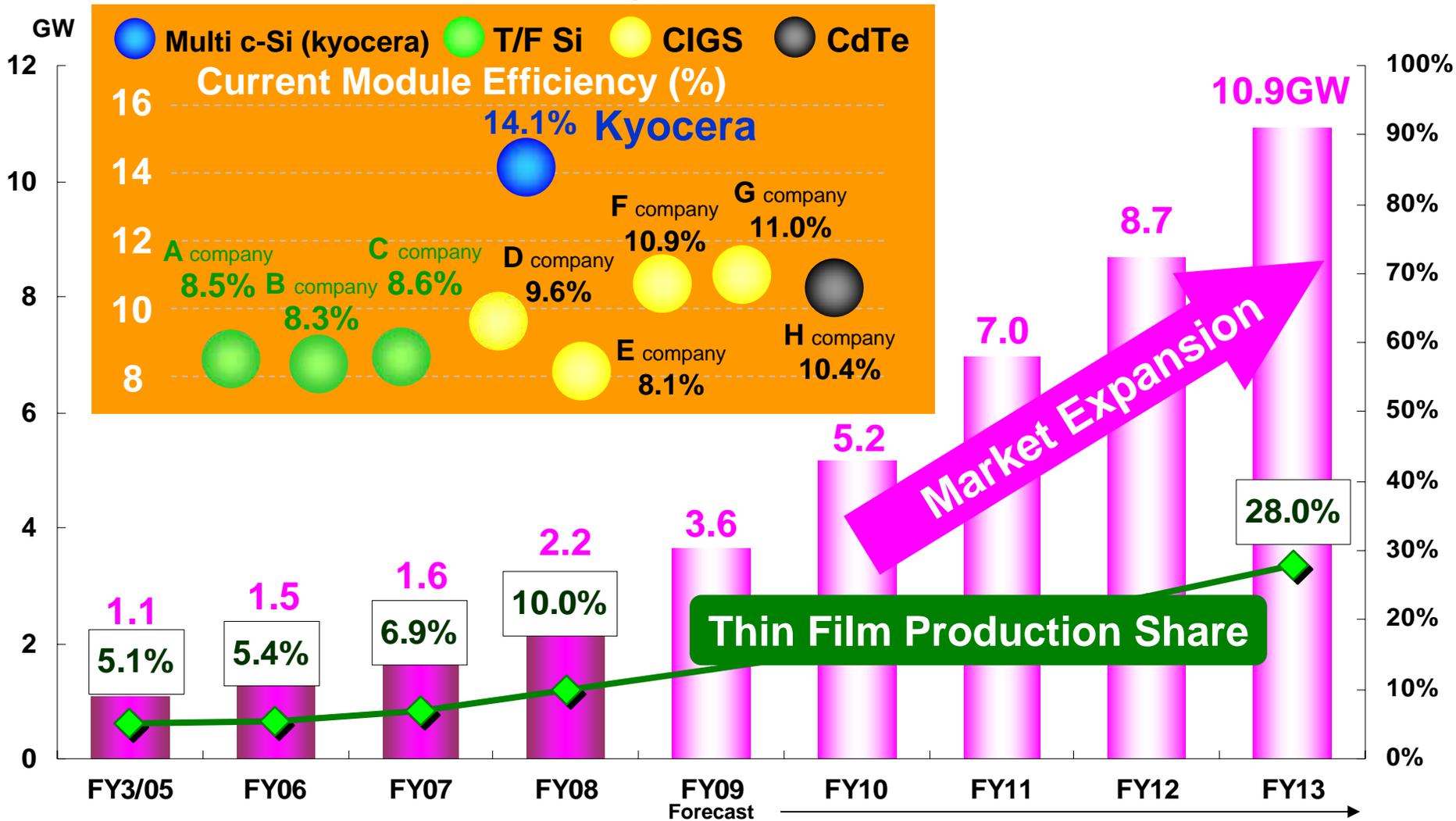
\*EEG= Erneuerbare-Energien-Gesetz

**Beginning of "intense competition era"**  
Gain comprehensive competitive advantages:  
**"cost competitiveness, technologies for development and quality"**

The background of the slide is a photograph of a sunset or sunrise over a mountain range. The sun is a bright, multi-pointed starburst in the center-left, casting a glow over the scene. The sky is a deep blue with wispy white clouds. The mountains in the foreground are silhouetted against the lighter sky, with a prominent peak on the right side.

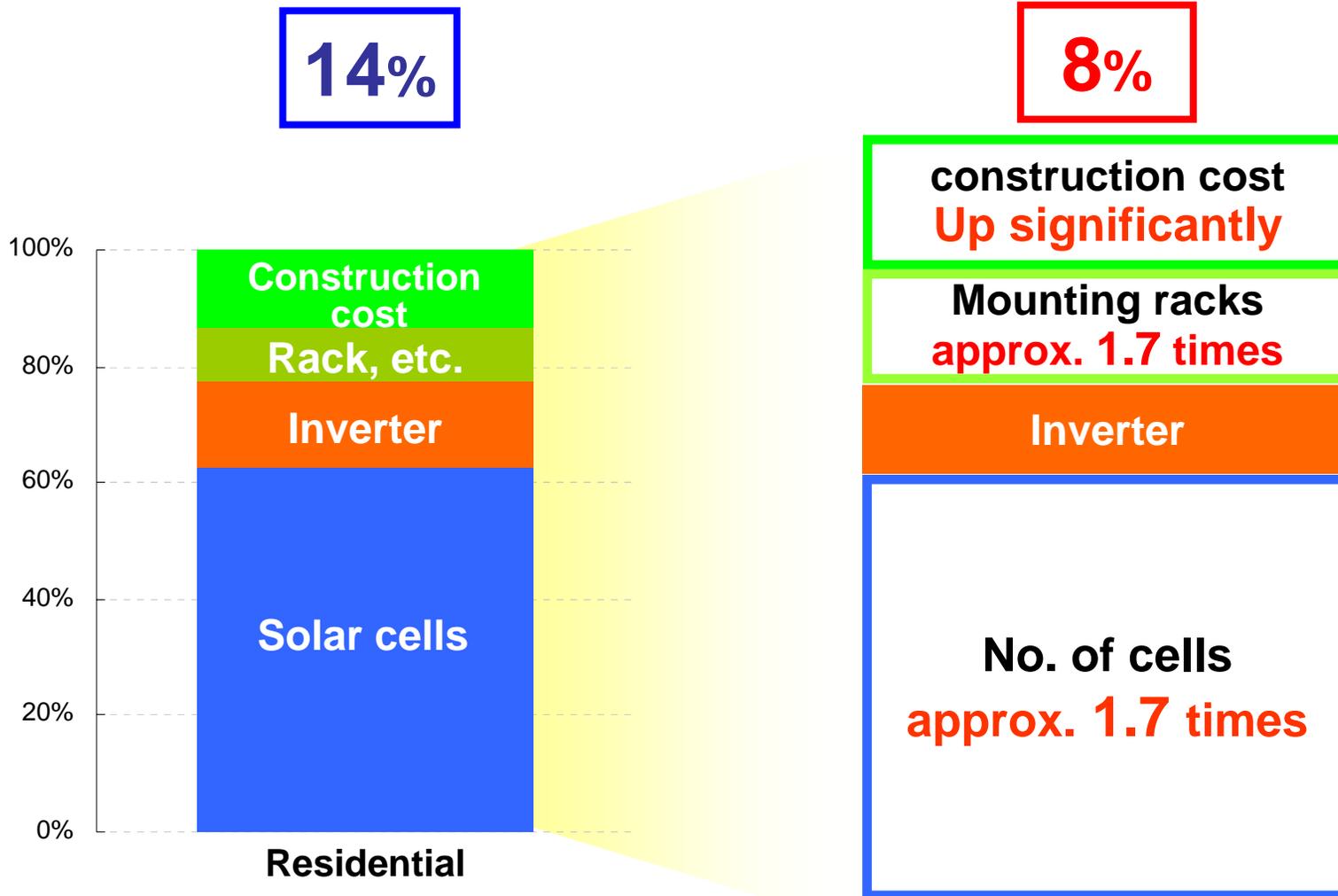
# About KYOCERA Solar

# Technology Market Trend



**Multi c-Si or Thin-film ? Total cost, long-term reliability...**

# Influence of conversion efficiency on Solar System Costs



**Multi c-Si or Thin-film ? Total cost, long-term reliability...**

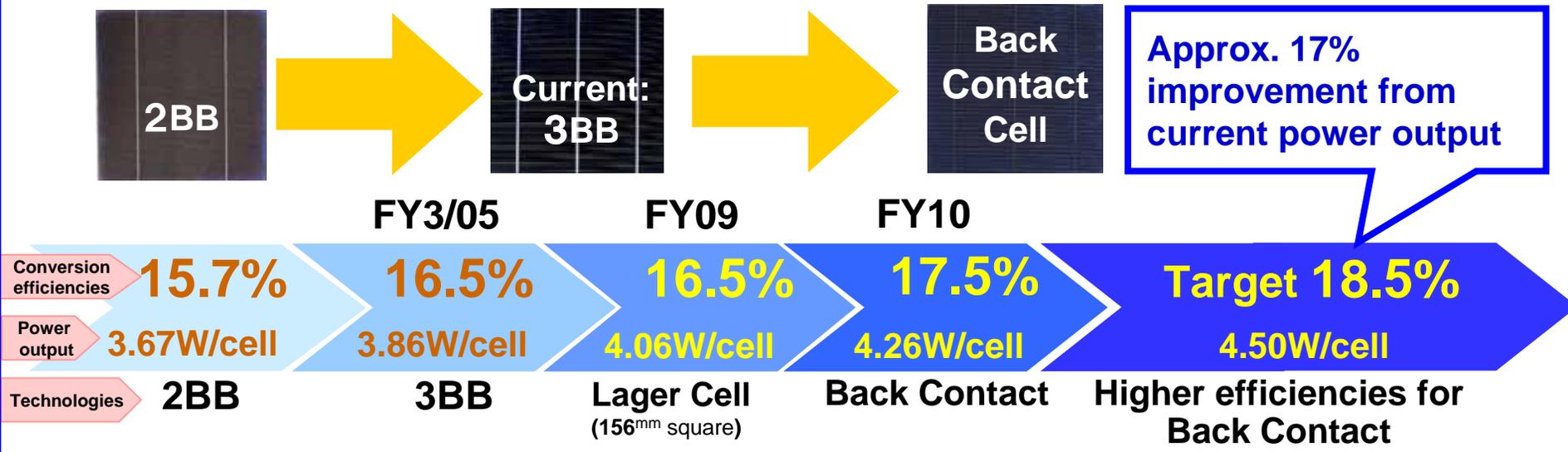
# Cost competitiveness: Improvement of conversion efficiencies



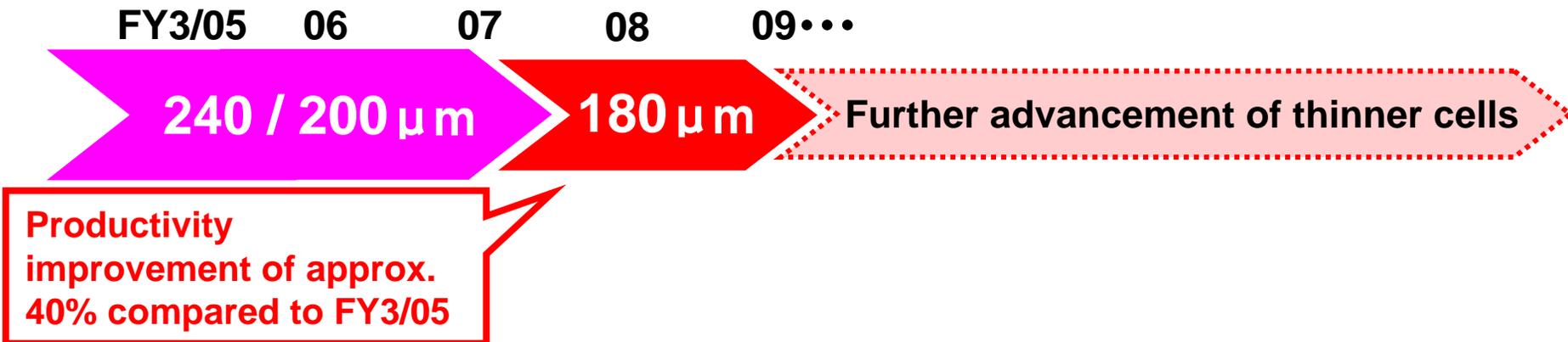
**Vertical integration ⇒ Aims to maximize conversion efficiencies with optimization in all production phases**

# Cost competitiveness: Productivity

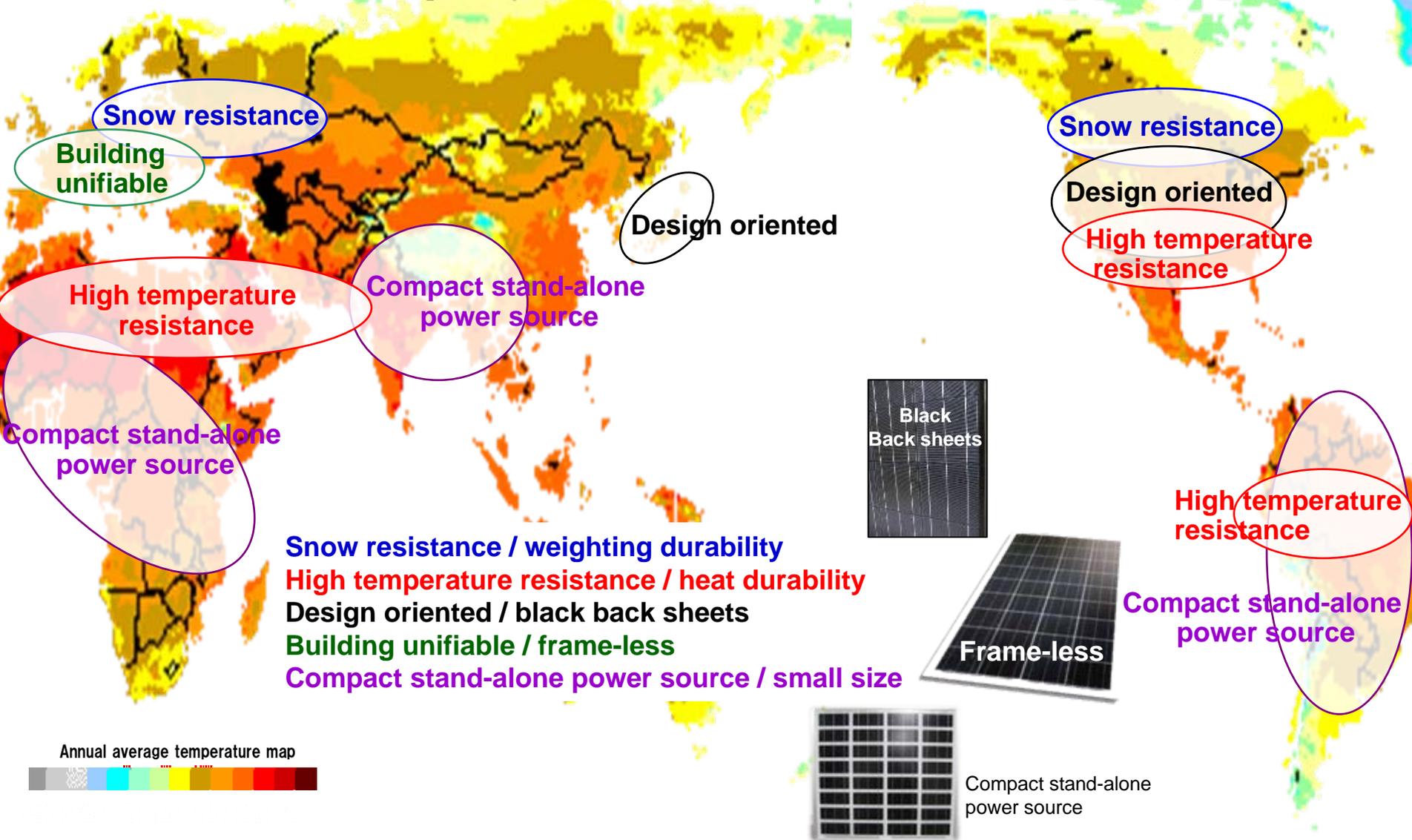
## 1. Higher cell efficiencies



## 2. Thinner cells



# Development of Differential Products

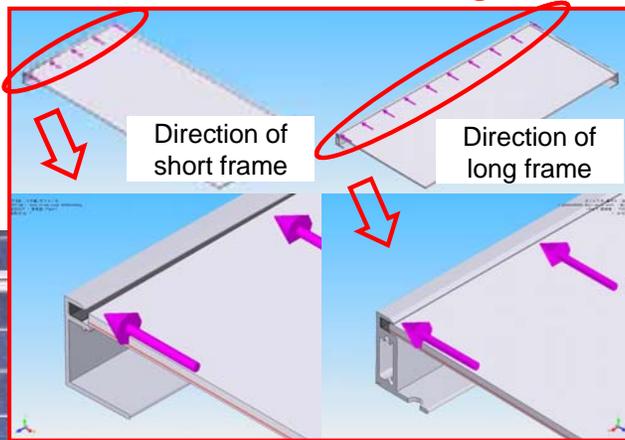


# PV Modules for 5400Pa

**Objective: Snow resistance (5400Pa)**

**Challenges: Frame strength  
Module durability**

## Snow load analysis

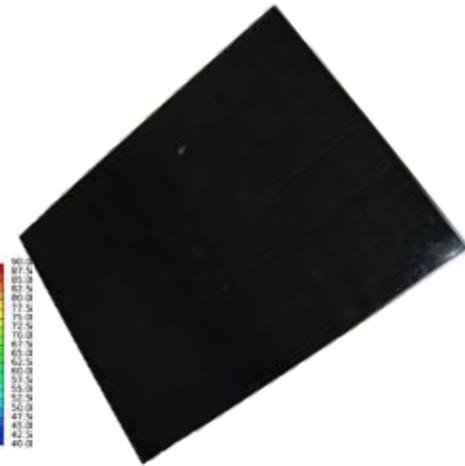
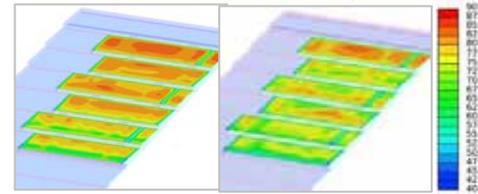


# Black Modules

**Objective: Better appearance**

**Challenges: High temperature resistance**

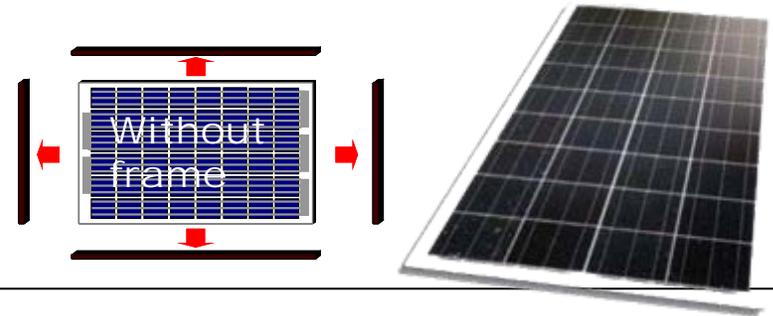
## TEMP. Analysis



# Frameless Modules

**Objective: Compatibility for various installation methods**

**Challenges: Metal fitting reliability**



# Development of Solar Modules

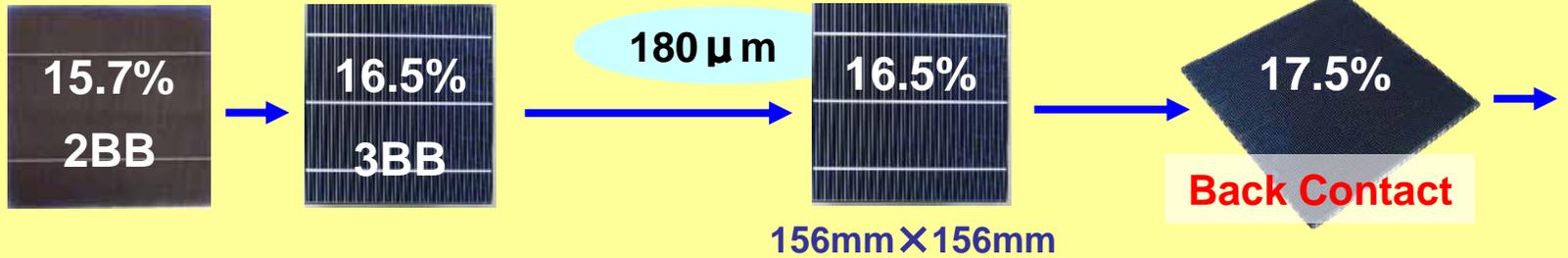
FY3/05 .....

FY09

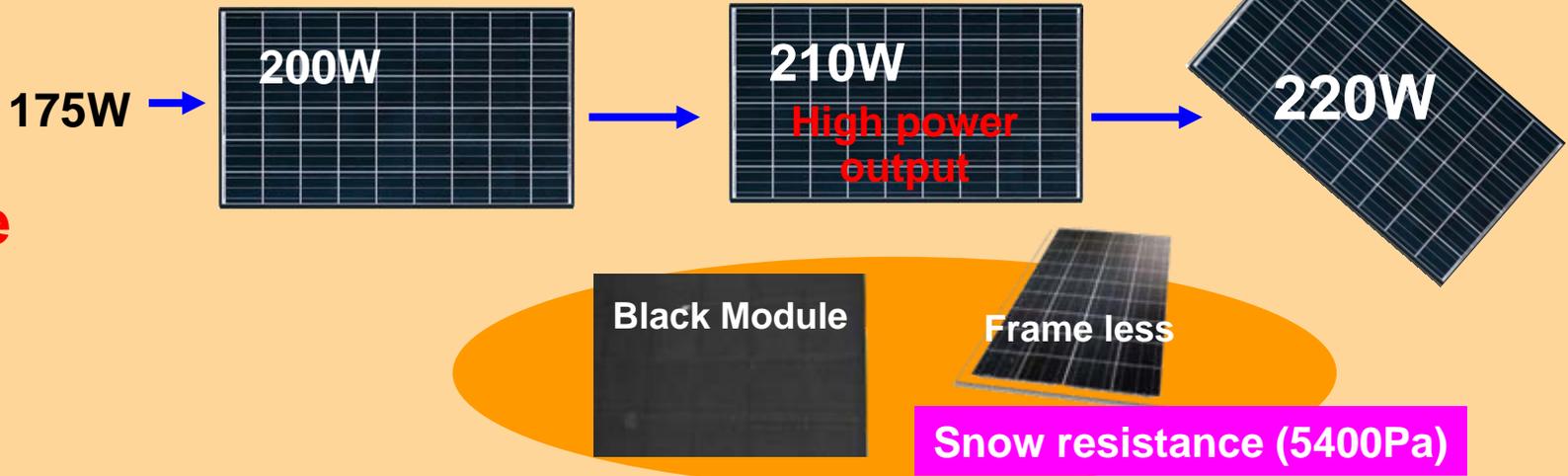
FY10

Target

Cell



Module



# No.1 Quality Evaluation in Germany

\*\*in 15 Makers

**Spitzenstellung**  
Spitzenstellung unter den polykristallinen Solarmodulen

**Kyocera stellt neue Hochleistungsmodule KC130GHT-2 und KC200GHT-2 vor.**

Mit gutem Beispiel voran

Kann ein Mangel etwas Gutes haben? Die Forschungsabteilungen von Kyocera bewiesen es: Der weltweite Rohstoffmangel im Bereich Silizium zwingt zu innovativen Ideen. Das Ziel sind deshalb Verbesserungen in der Zellenentwicklung, die den Wirkungsgrad spürbar vorantreiben ohne mehr Silizium zu verbrauchen. Kyocera-Ingenieure haben die Herausforderung angenommen und mit

**Geprüft und für gut befunden**

Kyocera Photovoltaikmodule unter den Testiegern der Stiftung Warentest

Die unabhängige Stiftung Warentest hat Solarmodule (Leistung bis 210 Wp max.) von 15 Herstellern - sowohl deutscher als auch internationaler Herkunft - einem strengen Test unterzogen. Die ganz aktuell veröffentlichten Ergebnisse einigen den Kyocera Modulen ein herausragendes „gutes“ zusammen mit 3 anderen Anbietern.

Besonders zu erwähnen ist:

- Der Kyocera Typ KC170GT-2 gehört zu den drei Modulen mit dem höchsten Wirkungsgrad von immerhin 16 %.
- Das Kyocera Produkt war das einzige aus polykristallinem Silizium hergestellte Modul unter den drei Besten mit dem höchsten Wirkungsgrad.

Wie die Testredakteure hervorhoben, ist der hohe Wirkungsgrad eines Photovoltaikmoduls ein wichtiges Kaufkriterium besonders bei kleinen Dachflächen.

**Spitzenergebnis**  
Stiftung Warentest bescheinigt Spitzenqualität von Kyocera Solarmodul

Das Ergebnis im Detail

Im Test 5/2006 hebt es schwarz auf weiß: Als einziges Photovoltaikmodul aus polykristallinem Silizium schaffte es das KC170GT-2 in die Spitzengruppe der Besten mit einem „sehr guten“ Wirkungsgrad.

Wurden 15 Solarmodule aus der gleichen Fabrik Produktion mit einer Leistung von 174,1 W getestet, so gehörte mit Ergebnis „sehr gut“ nur ein einziges zu den Testiegern.

Ein „sehr gutes“ Ergebnis ist ein Zeichen für die Qualität der Produktion von der Stiftung Warentest. Ein solches Ergebnis ist ein Zeichen für die Qualität der Produktion von der Stiftung Warentest.

**Mit Kyocera auf der sicheren Seite**

Wie im Testbericht hervorgehoben wurde, ist der hohe Wirkungsgrad eines Photovoltaikmoduls ein sehr wichtiges Kaufkriterium. Kunden, die bereits Kyocera Module einsetzen, sehen sich damit in ihrer Kaufentscheidung bestätigt. Qualität ist für uns eine absolute Dauerverpflichtung.

STIFTUNG WARENTEST

**GUT (1,9)**

Im Test: 15 Solarmodule  
Ermittelt am Produkt KC170GT-2

**test**® **5/2006**

www.test.de

**(Best: 1.0, Worst: 6.0)**

Evaluation Items	Output
	Durability
	Reliability
	Installation

Quality is True "DIFFERENTIATION"



KYOCERA with THE QUALITY

# Major Characteristics Required of Solar Cells

- Reduce total system cost, including installation cost
- Stable long term output (high reliability)

## 1. Costs

Factor with biggest impact on costs, ⇒

Conversion efficiency

Kyocera's back contact cells: 18.5%

VS thin-film 8~11%

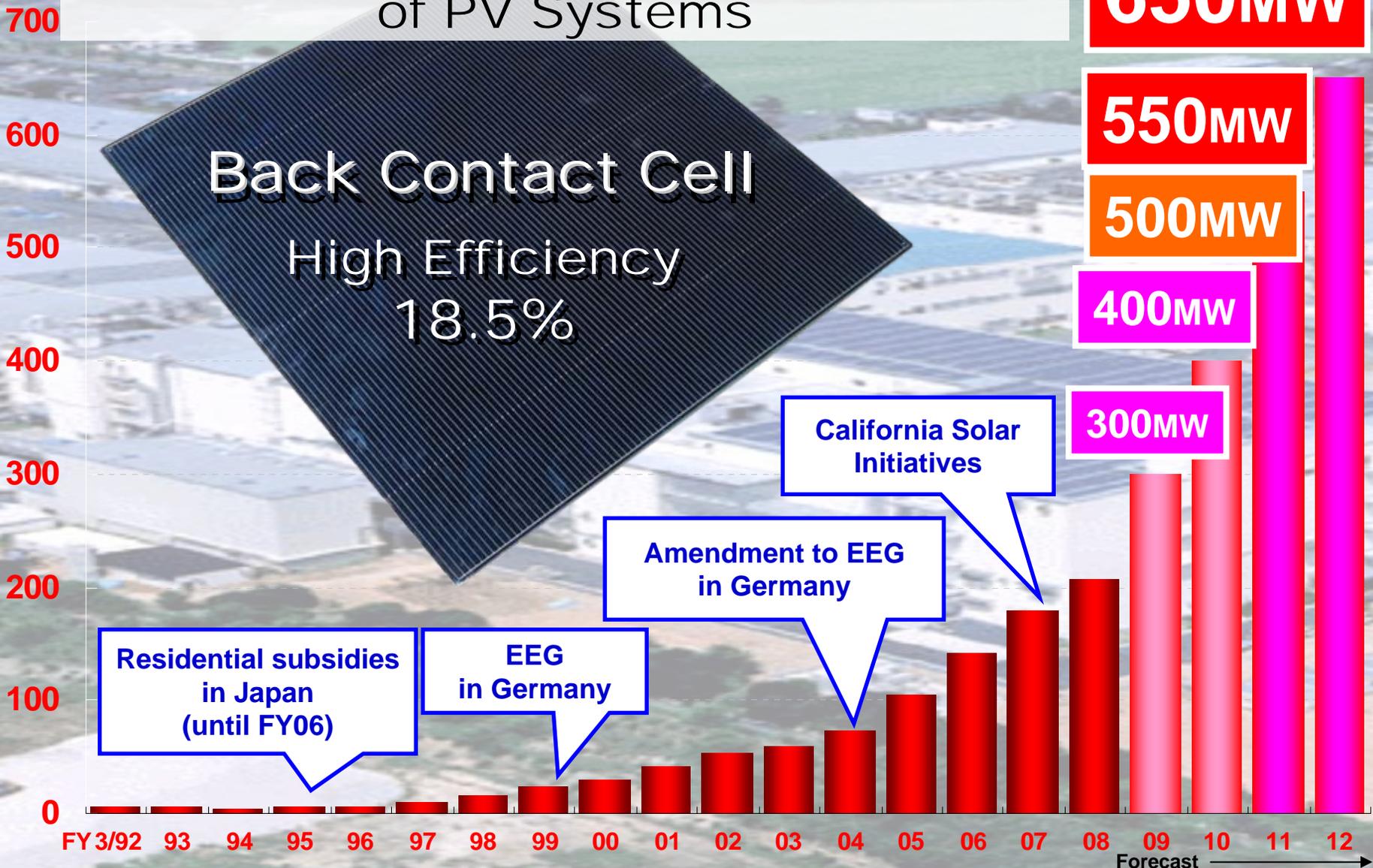
## 2. Long-term reliability

Kyocera's multi-crystalline cells:  
Over 20 years of testing and evaluation

VS thin-film ??

Multi-crystalline solar cells or thin-film solar cells ?

# Kyocera's Production Expansion Plan of PV Systems



Germany

Singapore

China

South Korea

Japan

Australia

USA



**8 sales bases worldwide**

*“Sales network built on long-term relationships of trust”*  
*“Anticipating customer needs”*

Germany



Czech Republic

Beijing



S-Korea

Kyocera

Tianjin

Japan

USA



Mexico

Singapore

Australia

**Ise 150MW/yr  
Plant construction  
completed**

**Mexico 240MW/yr  
Plant construction  
completed**

Brazil

**4 production bases worldwide**

*“Market-oriented module design”*

*“Production where markets are”*  
*“Quick delivery”*



Czech Republic



China



Japan / Ise



Yohkaichi



Mexico

THE NEW VALUE FRONTIER

