

The Eco-efficiency Forum  
The Second Eco-efficiency Seminar, 2004



# Whole-house Factor X and IT solutions

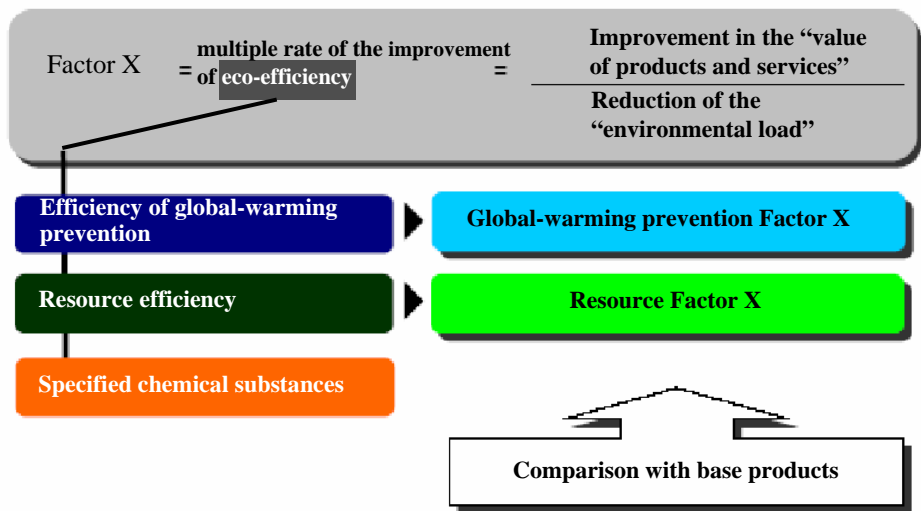
December 9, 2004  
Taeko Aoe  
Matsushita Electronic Industries

AOE Takeko

All Rights Reserves.

The Second Eco-efficiency Seminar, 2004

## Definitions of Factor X and Eco-efficiency



AOE Takeko

All Rights Reserves.

The Second Eco-efficiency Seminar, 2004

### Efficiency of global-warming prevention

<b>Efficiency of global-warming prevention</b>	$\text{Product performance} \times \text{Product life cycle}$ <hr/> <b>Greenhouse gas emissions during the life cycle</b>
--	---

AOE Takeko                      All Rights Reserves.                      The Second Eco-efficiency Seminar, 2004

### Resource efficiency

<b>Resource efficiency</b>	$\text{Product performance} \times \text{Product life cycle}$ <hr/> <b>Resources to be inputted + Resources to be wasted</b>
----------------------------	--

Resources to be inputtedIncrease resources to be recycled

Resources to be wastedReduce the amount of waste to below the acceptable environmental limit

AOE Takeko                      All Rights Reserves.                      The Second Eco-efficiency Seminar, 2004

## Why Factor X / Eco-efficiency?

AOE Takeko

All Rights Reserves.

The Second Eco-efficiency Seminar, 2004

### For the realization of a sustainable society

#### Sustainable society

GP supply by businesses  
(the development of GP)

Demands for GP by consumers  
(the diffusion of GP)

What is the  
definition of GP?

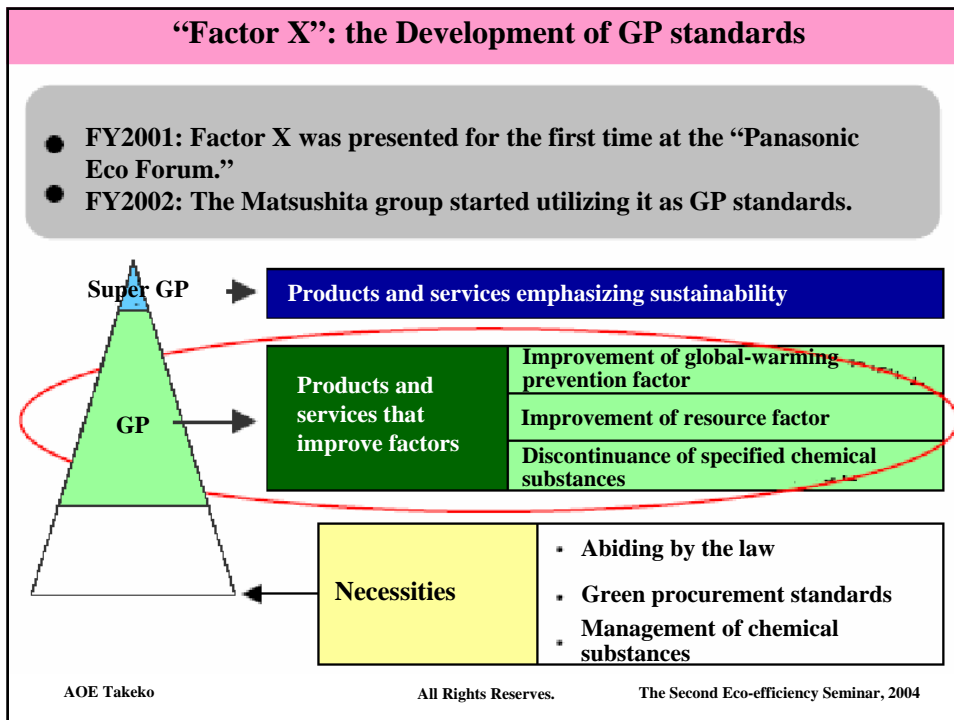
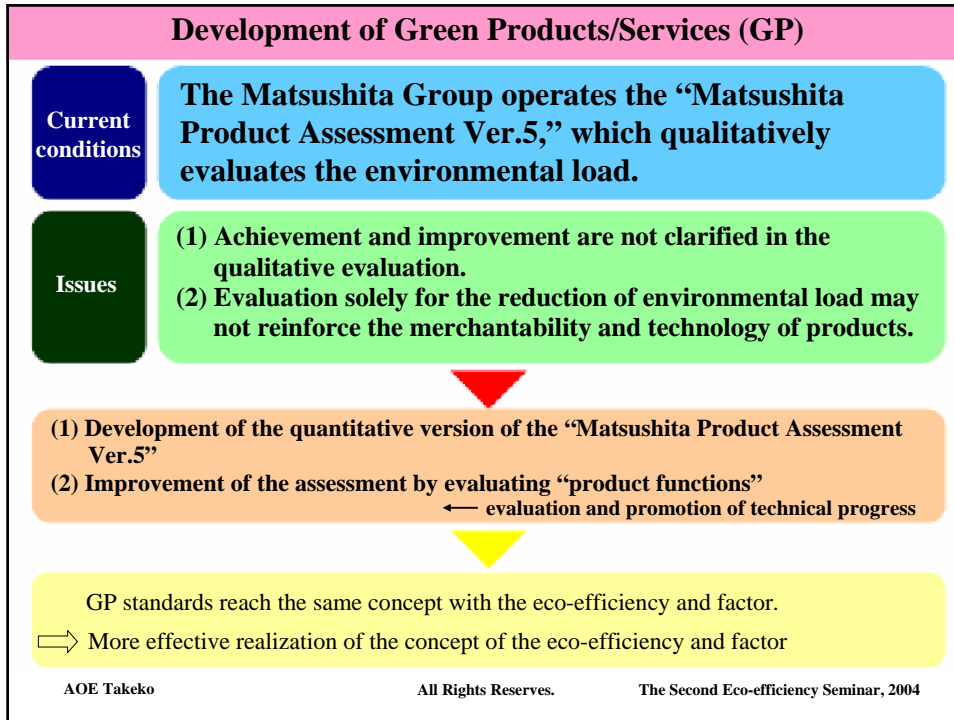
GP: Green Products/Services

Comprehensive and common GP standards are necessary  
for “designers/developers,” “managers,” and “users.”

AOE Takeko

All Rights Reserves.

The Second Eco-efficiency Seminar, 2004



Target Values of Green Products/Services (GP)			
Environmental Action Plan by the Matsushita Group "Green Plan 2010" (excerpt)			
	2000	2005	2010
Global-warming prevention factor	1.0	1.3	1.5
Resource factor	1.0	1.5	1.7
Specified chemical substances	Discontinued during FY2004 - 2006		
GP development rate	-	70%	90%

AOE Takeko All Rights Reserves. The Second Eco-efficiency Seminar, 2004

### Acceleration of GP Development: Performance Review


- "Environmental management" is included in performance reviews, consisting of a 10% proportion since FY2002.  
- 10% of salary is decided by the environment. -
- ◆ Details of the FY2002 performance review

Reviewed items	Reviewed items	
	Green products	
	Development of super GP	1 type
	GP → $GP\ development\ rate = \frac{Sales\ of\ GP}{Sales\ of\ all\ products}$	28%
Improvement of corporate values	Clean factory	
Environmental management	Energy, waste and chemical substances	
Customer satisfaction		

AOE Takeko All Rights Reserves. The Second Eco-efficiency Seminar, 2004


### Acceleration of GP Diffusion: Type II Eco Labels

- FY2003: Type II Eco Labels (ISO 14020) were adopted.
- FY2003: The booklet “Factor X” was published to accelerate the diffusion of GP.



**Type II Eco Labels**

AOE Takeko







**The booklet “Factor X”**

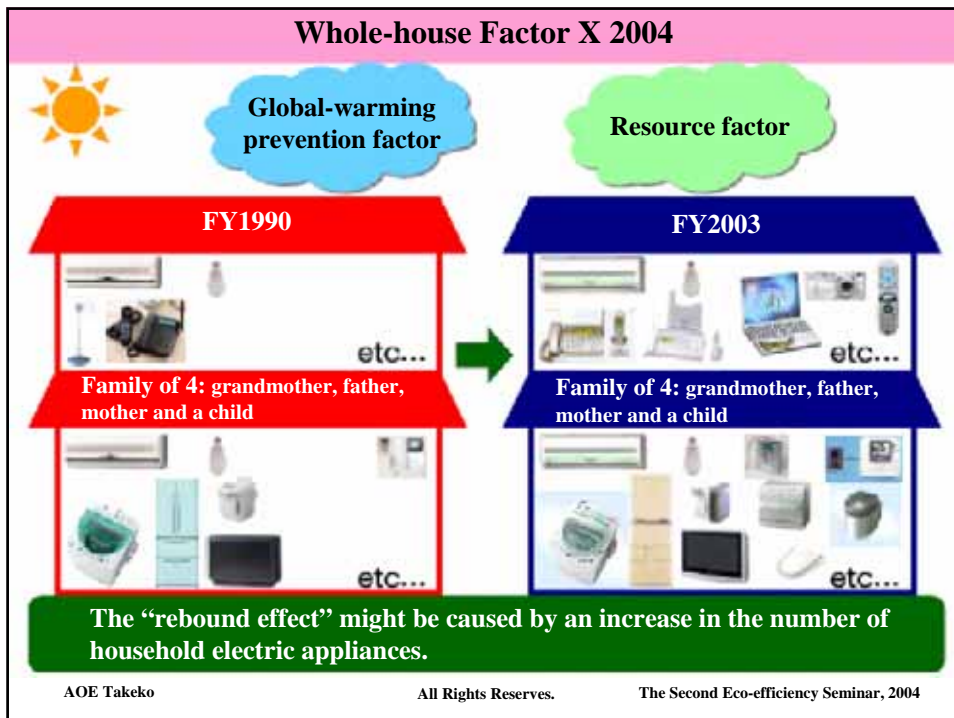
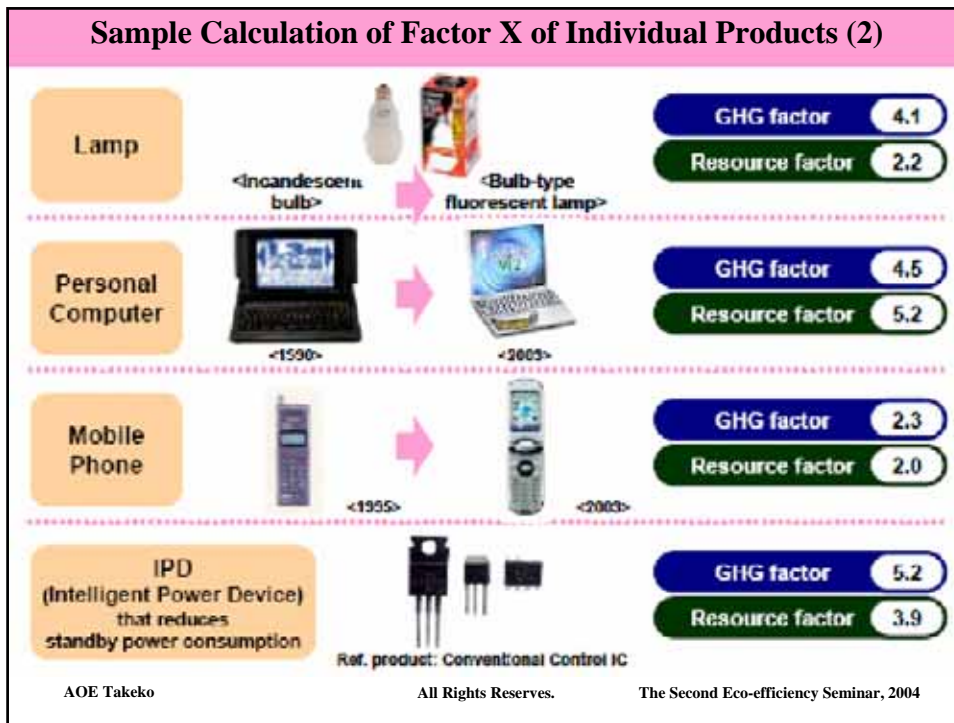
All Rights Reserves.

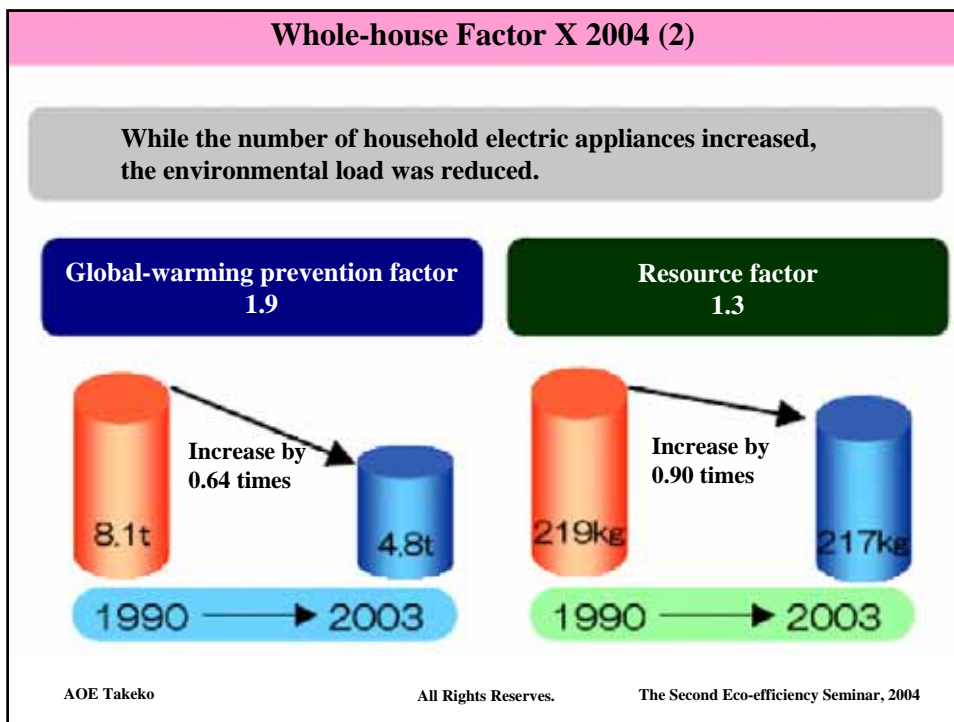
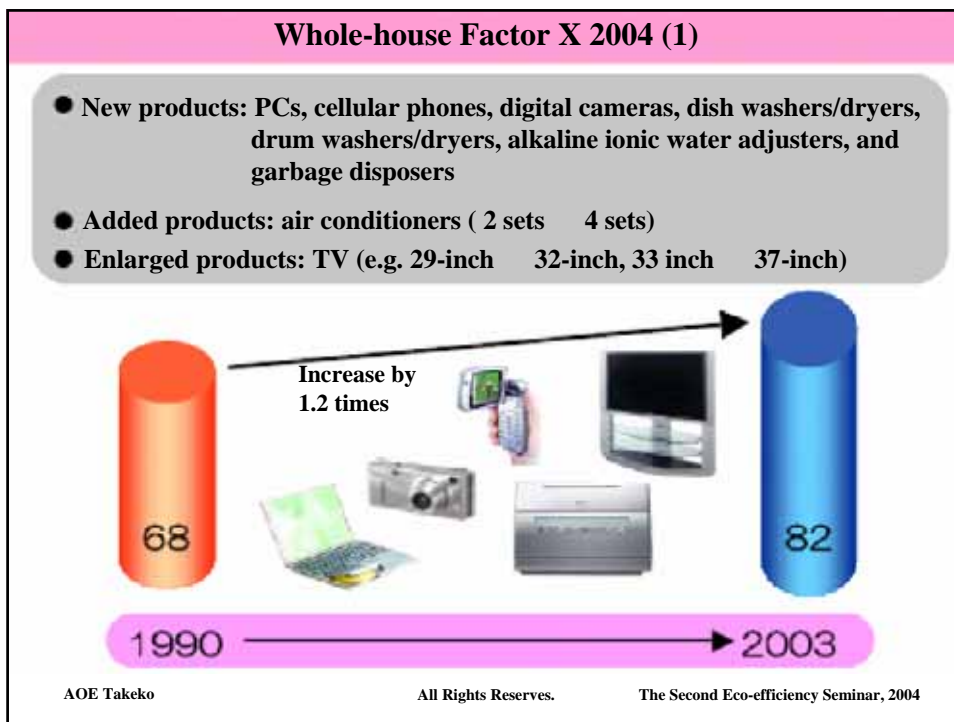
The Second Eco-efficiency Seminar, 2004

### Sample Calculation of Factor X of Individual Products (1)

<div style="background-color: #f9c78d; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">CRT Television</div>		<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">GHG factor</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Resource factor</div>	<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">4.7</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">4.5</div>
<div style="background-color: #f9c78d; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Drum-type Washer-Dryer</div>		<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">GHG factor</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Resource factor</div>	<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">1.6</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">1.7</div>
<div style="background-color: #f9c78d; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Refrigerator</div>		<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">GHG factor</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Resource factor</div>	<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">5.2</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">1.0</div>
<div style="background-color: #f9c78d; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Air Conditioner</div>		<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">GHG factor</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 80px; margin: 0 auto;">Resource factor</div>	<div style="background-color: #003366; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">3.1</div> <div style="background-color: #006633; color: white; padding: 5px; border-radius: 10px; width: 60px; margin: 0 auto;">1.4</div>

AOE Takeko
All Rights Reserves.
The Second Eco-efficiency Seminar, 2004





### Home Energy Management System

● **Home Energy Management System (HEMS)**

- Utilizing IT technologies, the system connects energy-consuming appliances via network, and effectively operates them through automatic controls.
- Hassle free energy saving in a house is possible for the residents.

◆ **The third Global Warming Prevention Technologies Council, 2004**

FY2030: Air conditioners: reduced by 14%  
All lighting and household appliances: reduced by 10%

◆ **The Energy Management Achievement Report, 2002, the New Energy and Industrial Technology Development Organization (NEDO)**

Results from demonstrative tests on FY2002:  
Single houses: reduced by 7.1%  
Complex residences: 6.8%

AOE Takeko
All Rights Reserves.
The Second Eco-efficiency Seminar, 2004

