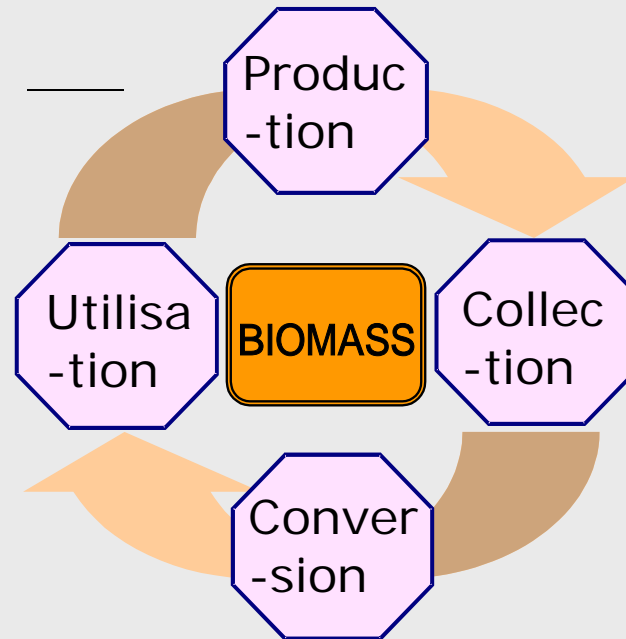


Biomass-Nippon Strategy



Ministry of Agriculture, Forestry & Fisheries, Japan

Contents

- 1. Backgrounds**
- 2. Biomass-Nippon Strategy**
 - 2-1. Definition of biomass**
 - 2-2. Current status of biomass utilization**
 - 2-3. Goals**
 - 2-4. Action plans**
 - 2-5. Biomass Town**
- 3. R & D**
- 4. Summary and Conclusion**

1. Backgrounds

- 1) Prevention of Global Warming**
- 2) Creation of a “Recycling-Oriented” Society**
- 3) Fostering of New Strategic Industries**
- 4) Activation of Agriculture, Forestry, Fishery,
and associated Rural Communities**

2-1. Definition of biomass

Biomass = *Renewable, organism-derived organic resource, excluding fossil resources*

Waste Biomass

- Paper waste
- Livestock waste
- Food waste
- Construction wood
- Black liquor
- Sewage sludge

Unused Biomass

- Rice straw
- Rice husk
- Thinned wood
- Damaged wood

Energy crops

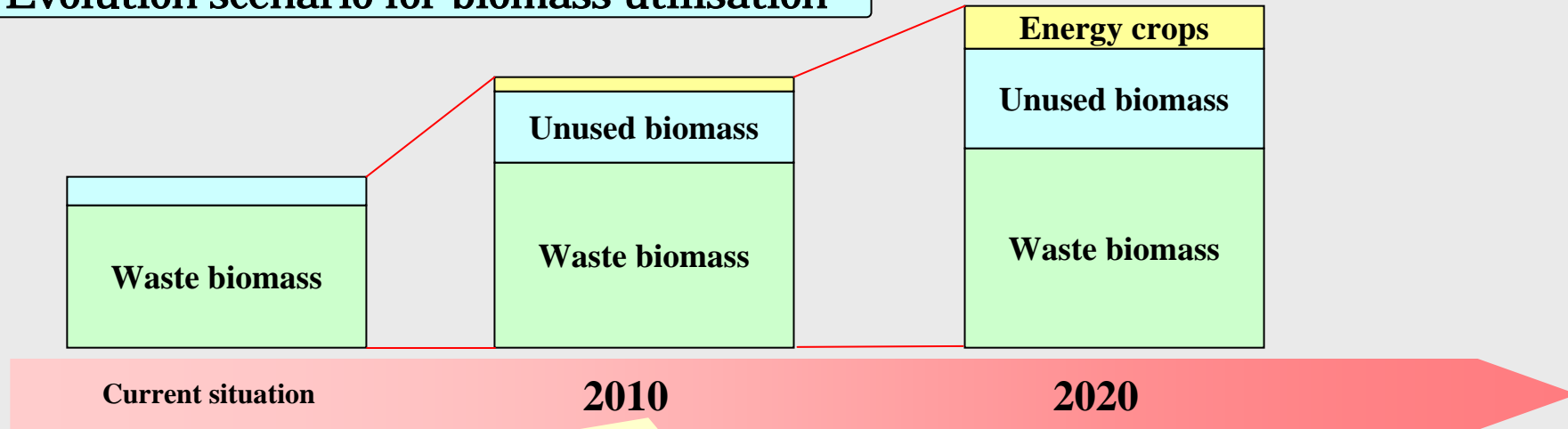
- Maize
- Oil seeds
- Sugarcane

2-2.Current status of biomass utilization

Biomass	mn tonnes / year	current status of utilisation
Waste Biomass		
livestock waste	91	80% used as fertiliser
food waste	22	less than 10% used as fertiliser
paper waste	14	-
black liquor	14	About 100% used as energy source
sewage sludge	76	40% used as landfill, 60% used as construction materials or fertitliser
residues at lumber mills	6	90% used as energy or fertiliser
construction-derived wood residues	5	40% used as paper, cardboard, etc.
Unused Biomass		
forestry residues	4	-
rice straw, etc.	13	30% used as compost, feed, etc.

2-3. Goals

Evolution scenario for biomass utilisation



Goals - 2010

Nation-wide perspective

- **Waste biomass** : utilise more than **80%** in terms of carbon equivalent
- **Unused biomass** : utilise more than **25%** in terms of carbon equivalent
- Start the commercial use of **energy crops**

Technological perspective

- Energy conversion efficiency
(20% in terms of electricity,
80% in terms of heat)

Regional perspective

- Launch **500** Biomass towns

2-4. Action plans

1) General aspects

- ' Establish a Biomass Information Headquarters on site
- ' Support ambitious municipalities on biomass utilization and demonstrate them for other municipalities as model projects

2) Production, Collection, and Transportation

- ' Create an efficient collection/transportation system for biomass

3) Conversion of Biomass

- ' Develop conversion technologies
- ' Make products highly value added and diversification

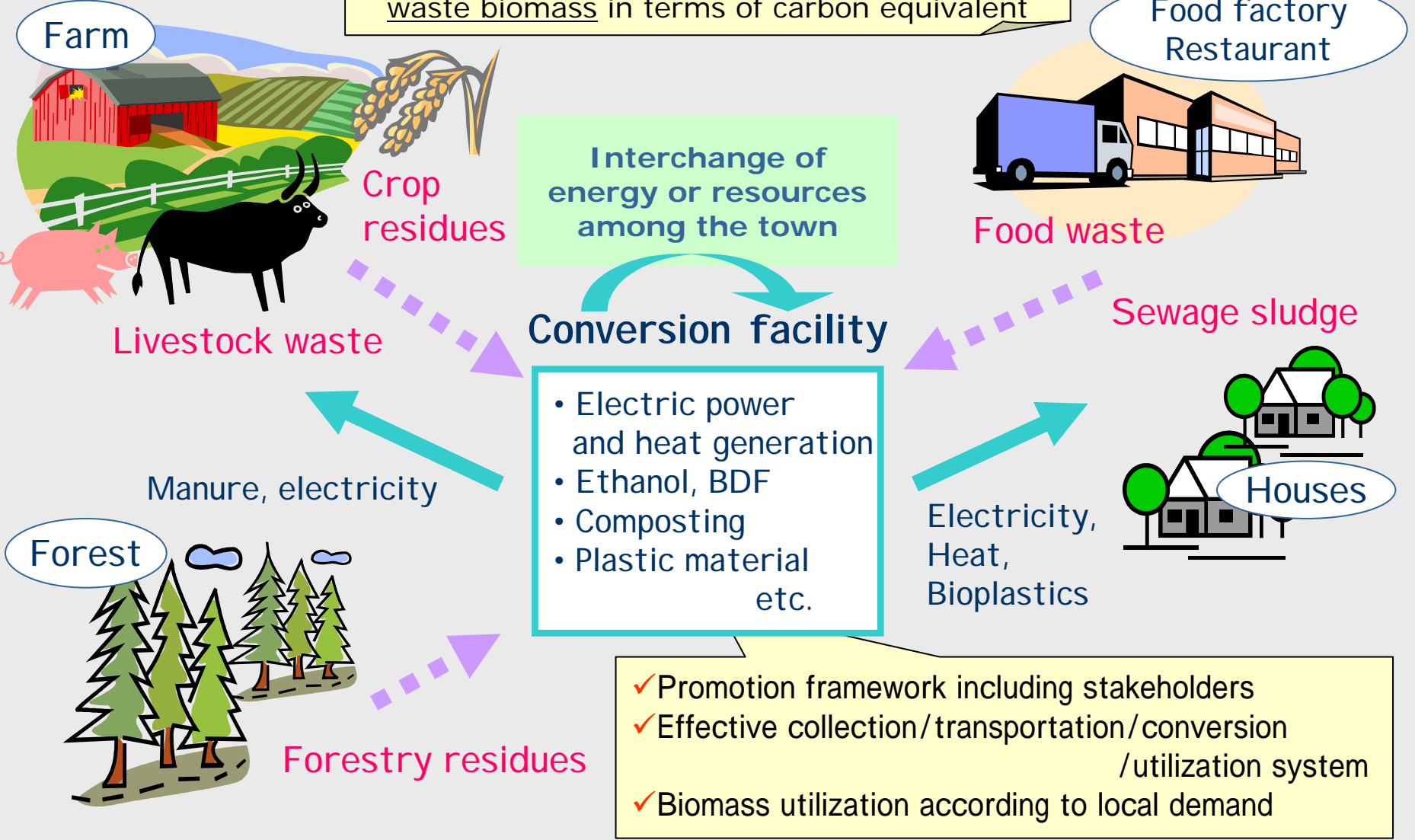
4) Use of Biomass

- ' Improve the environment for promotion of the use of bioplastics and biofuels, and the biomass power generation

2-5. Biomass Town

Goal to launching 500 towns by 2010

Necessary conditions
More than 40% of unused biomass or 90% of waste biomass in terms of carbon equivalent



Interchange of energy or resources among the town

Conversion facility

- Electric power and heat generation
- Ethanol, BDF
- Composting
- Plastic material etc.

Farm



Crop residues

Livestock waste

Manure, electricity

Forest



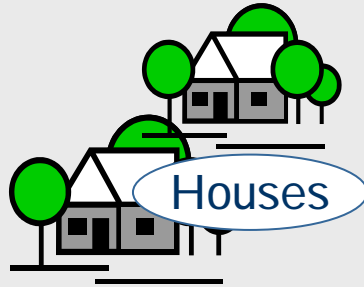
Forestry residues

Food factory Restaurant



Food waste

Sewage sludge



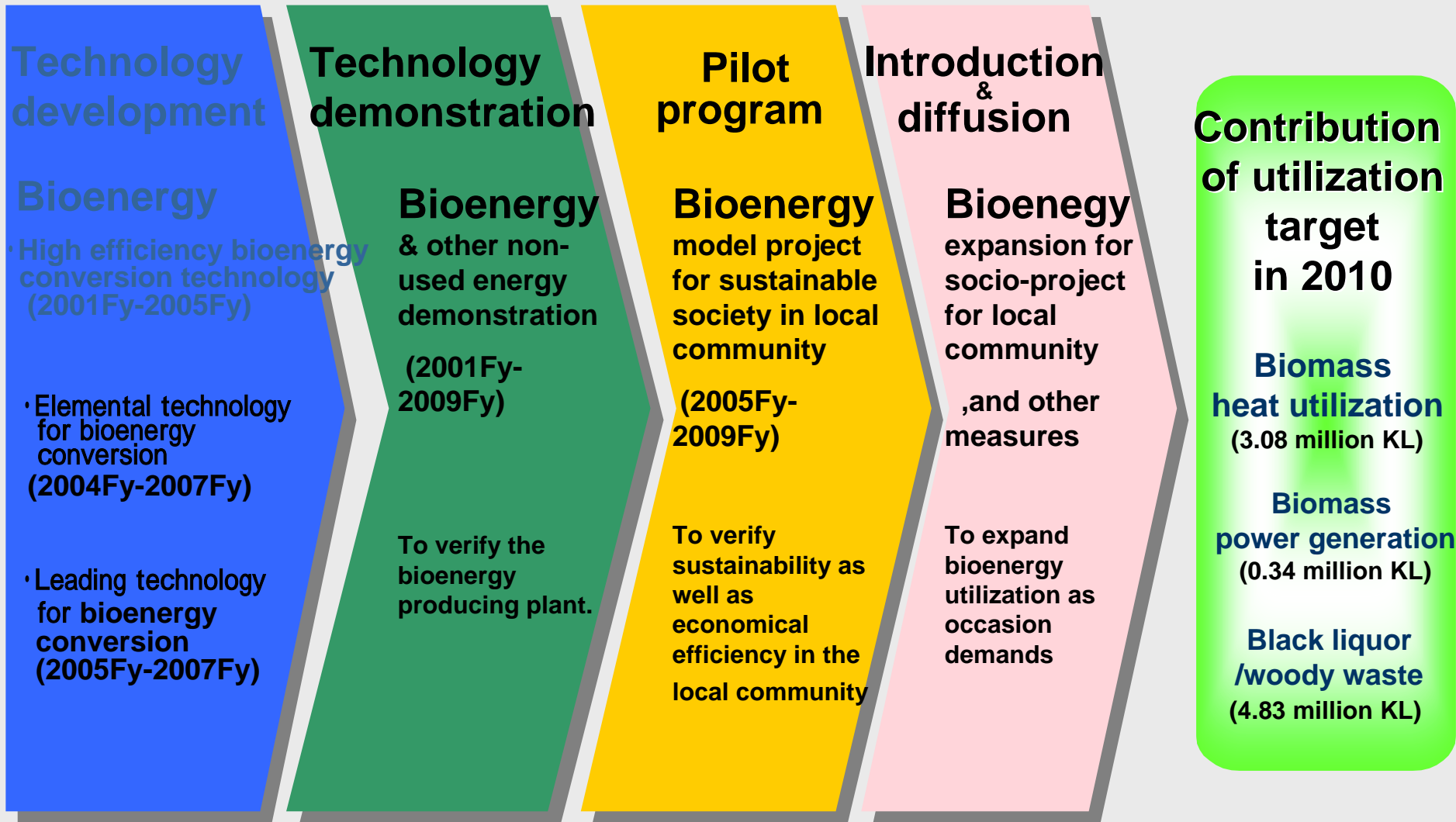
Houses

Electricity, Heat, Bioplastics

- ✓ Promotion framework including stakeholders
- ✓ Effective collection/transportation/conversion /utilization system
- ✓ Biomass utilization according to local demand

3. R & D

~ Measures for bioenergy diffusion in NEDO



4. Summary and Conclusion

- 1) Cabinet decision - Inter-ministerial initiative**
- 2) 4 main reasons to establish the strategy including a creation of “Recycling-Oriented” Society.**
- 3) Goals, and action plans for each ministry are identified.**
- 4) Future challenge:**
 - How to establish biomass utilization systems to contribute the vitalization of rural areas.
 - How to develop biomass-technologies to use more efficiently and economically.
 - How to make the partnership of Asia for biomass utilization.