



Bioenergy policies

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Biomass Markets and Policy

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Market is s not active
Transport spending (pipes)
Difficult to promote at the beginning
Less sellers (producers)
...

Policy

Market

Environment

Society

Stakeholders

- Policy makers
- Forest land owners
- Sellers
- Consumers
-

Types

Table 1 Major national policies that affect forest-based bioenergy in China

Name	Year	Relevant contents
Renewable Energy Law	2006	Sets up the principals for developing bioenergy
Trial measures on management of cost-sharing for renewable energy power generation prices & expenses	2006	Stipulates the subsidy policies for biomass power generation
Interim measures on special fund management for development of renewable energy	2006	Gives special funding support for biomass power generation
Middle- and Long-Term Development Plan for renewable energy	2007	Sets up the targets of biomass power generation for 2010 and 2020 and associated supporting policies
Interim measures on subsidies for bioenergy and biochemical raw material bases	2007	Gives one-time subsidy of \$454.5 USD per hectare for lands used for forestry biomass production
The Law of the People's Republic of China on Enterprise Income Tax	2008	Grants biomass power plants a 10% tax break on generated income
Notice on Value-Added Tax Preferences Policies for products related with comprehensive utilization of resources	2008	Waves the value-added tax for revenues from selling biomass power generated using forest wastes and biodiesel made from vegetation oils
Notice on Improving Pricing Policy for Agricultural Biomass and Forestry Biomass Power Generation	2010	Increases the price of electricity generated from biomass power plants to \$110 USD MWh ⁻¹
Notice on the Management of Biomass Power Generation Project Construction	2010	Regulates biomass power projects, including the project size, geographic concentration, and planning process
Standard for Biodiesel-Blended Fuel (B5)	2010	Sets up the standard for blending 2%–5% of biodiesel into diesels sell on the market

Policy

Public policy

- Law
- Regulation
 - Responsibility
 - Management
 - Price
 -
- ...

Renewable Energy Law

Regulations Related to Renewable Energy
Power Generation

Policy

Plan

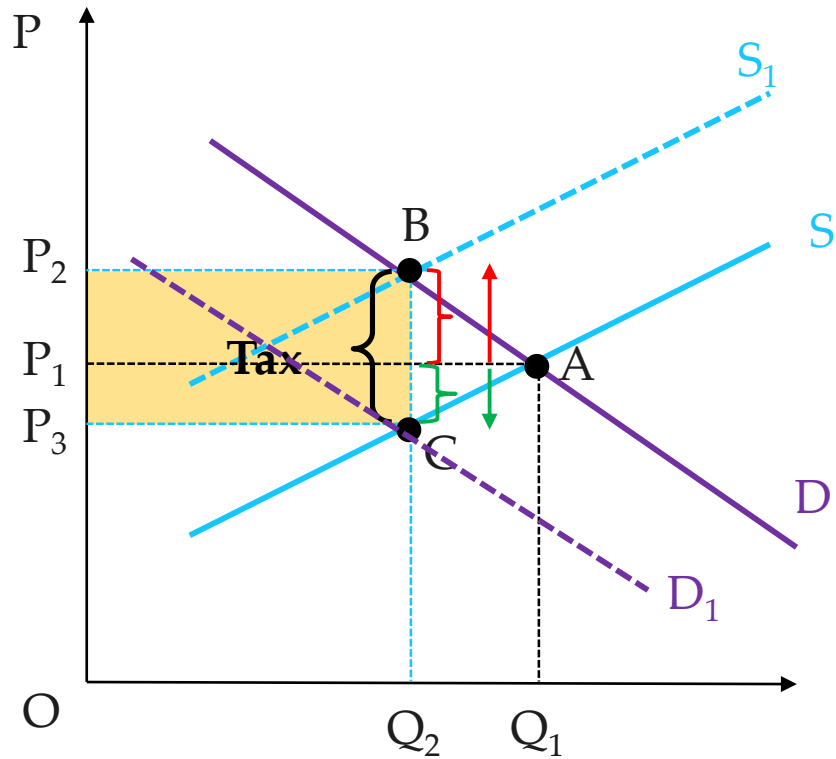
- Aim, objective
- Timetable
- Potential
- Action
- Area
- Amount
- Project
- Pilot project
- ...


Bioenergy Development the thirteenth Five -
Year Plan,
National Energy Administration, 2016.

Policy

Fiscal policy

- Tax



Tax	Difference	
Sellers	Customers pay	↑
	Sellers earn	↓
Customers	Customers pay	↑
	Sellers earn	↓
Tax amount	$Q_2 \times \text{Tax}$	

Policy

Fiscal policy

- Tax
- Subsidy

Table 2 Investment from China's government in the biogas industry from 2003 to 2009.

Year	2003	2004	2005	2006	2007	2008	2009	Total
Investment (billion CNY)	1.0	1.0	1.0	2.5	2.5	6.0	5.0	19.0

82% Construction of household biogas degesters

10% Construction of medium and large-scale biogas plants

8% Service systems

Policy

Fiscal policy

- Tax
- Subsidy
- ...

Policy

Education policy

- Education
- Training

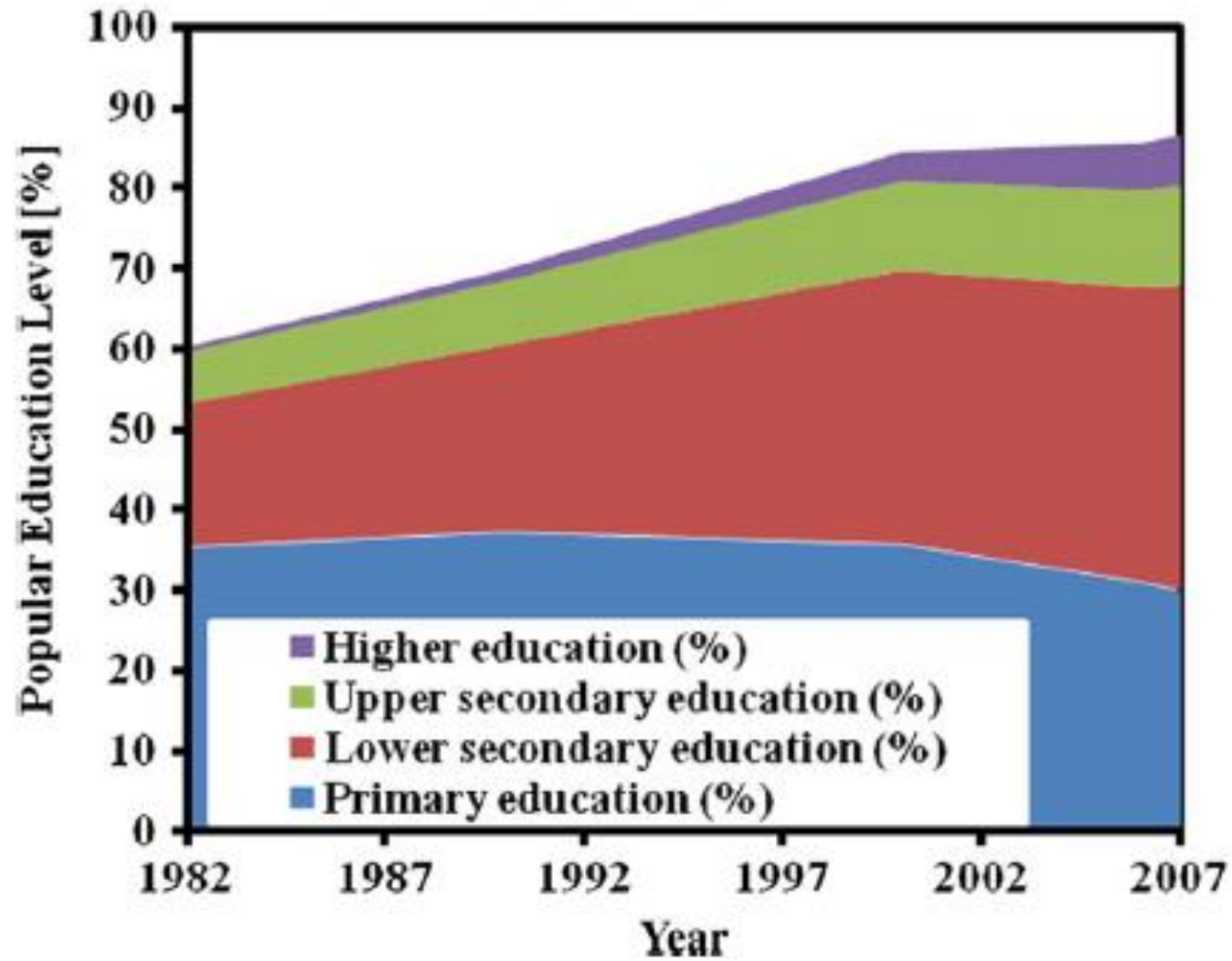


Figure 1 Population percentage at different educational levels in PR China

Policy

Standard

- Term
- Production
- Safe
- ...

Concept

Quality, content...

Facility

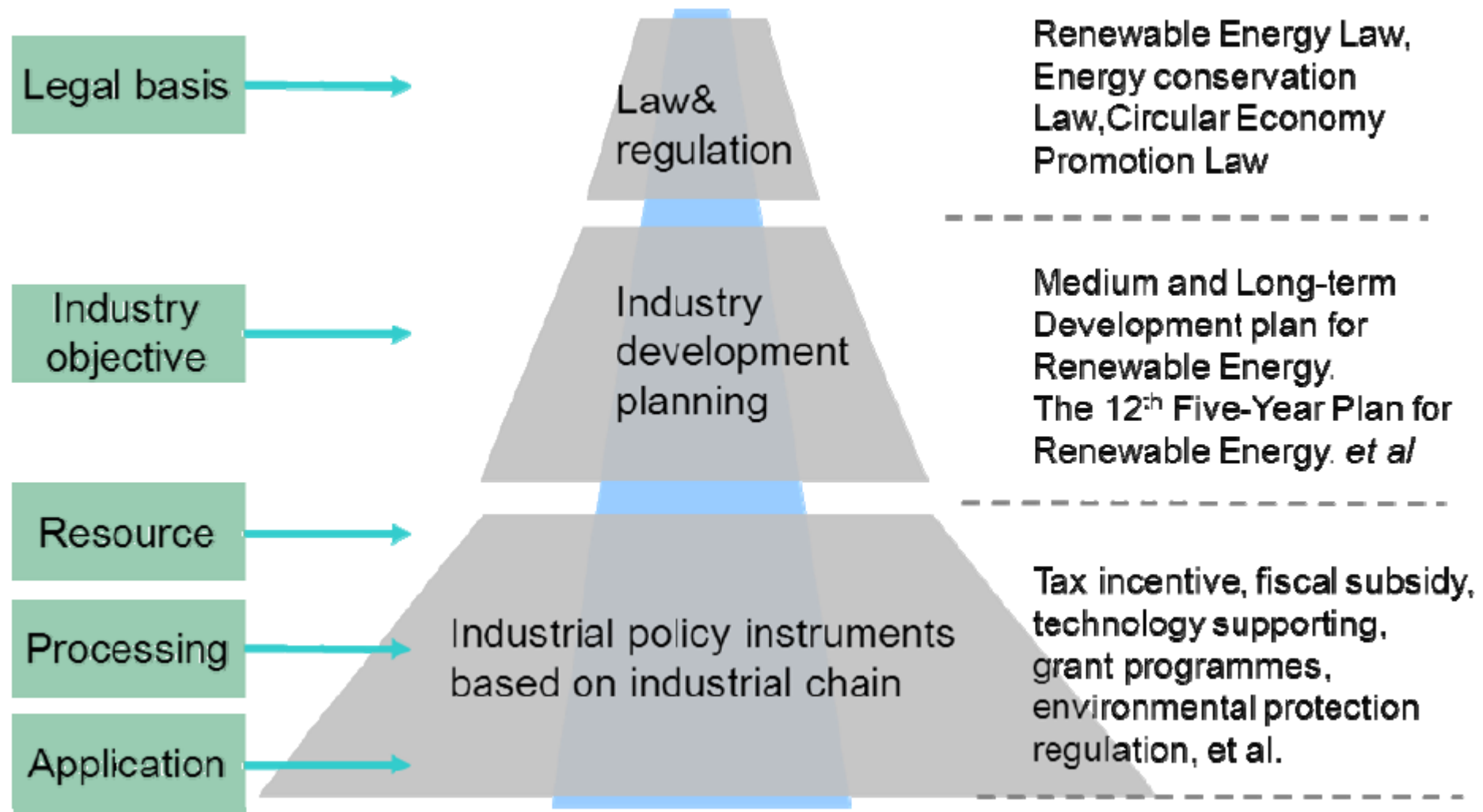


Figure 2 The conceptual framework of Densified Biomass Solid Fuel related policy

Exercise

Draw a figure

Find solutions based on previous exercise, including:

- Bienergy supply chains (upstream, midstream, downstream)
- Policies (why, how, stakeholders)

Previous exercise

Supply chains

Including : upstream, (midstream,) downstream

Discuss: difficulties when you apply the product into the market

Upstream

Sources

What, where, when

Midstream

By-products

Downstream

Products and uses

Product: biogas, bioethanol, biodiesel...

Uses: heating, power generation...

Proposed consumer and seller

Household, company...

Difficulties

Logistics, products, sellers, consumers...

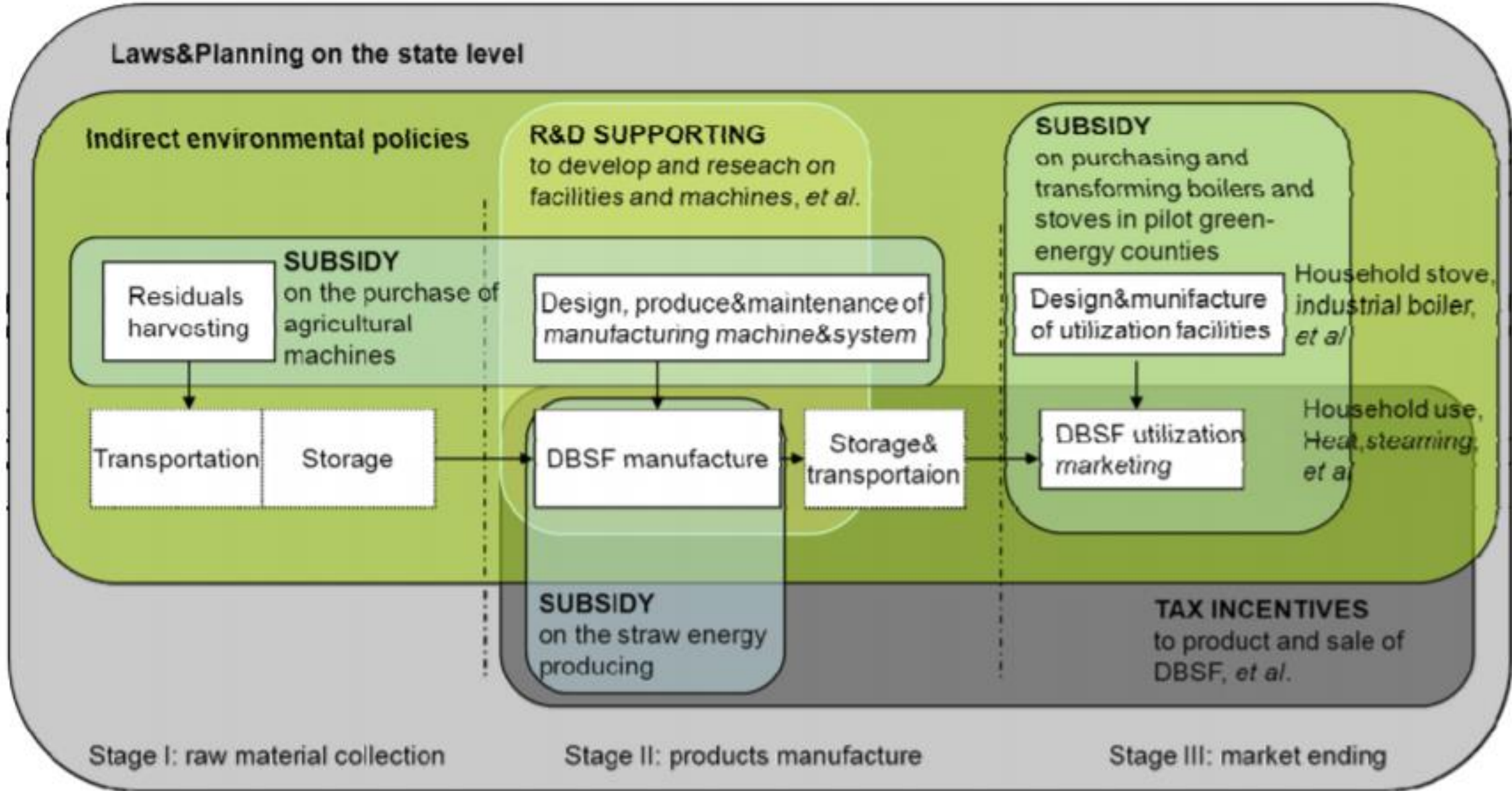


Figure 3 The policy instruments based on Densified Biomass Solid Fuel supply chain

Source: Wenyan Wang, Wei Ouyang, Fanghua Hao. A Supply-Chain Analysis Framework for Assessing Densified Biomass Solid Fuel Utilization Policies in China, *Energies* 2015, 8(7), 7122-7139.