

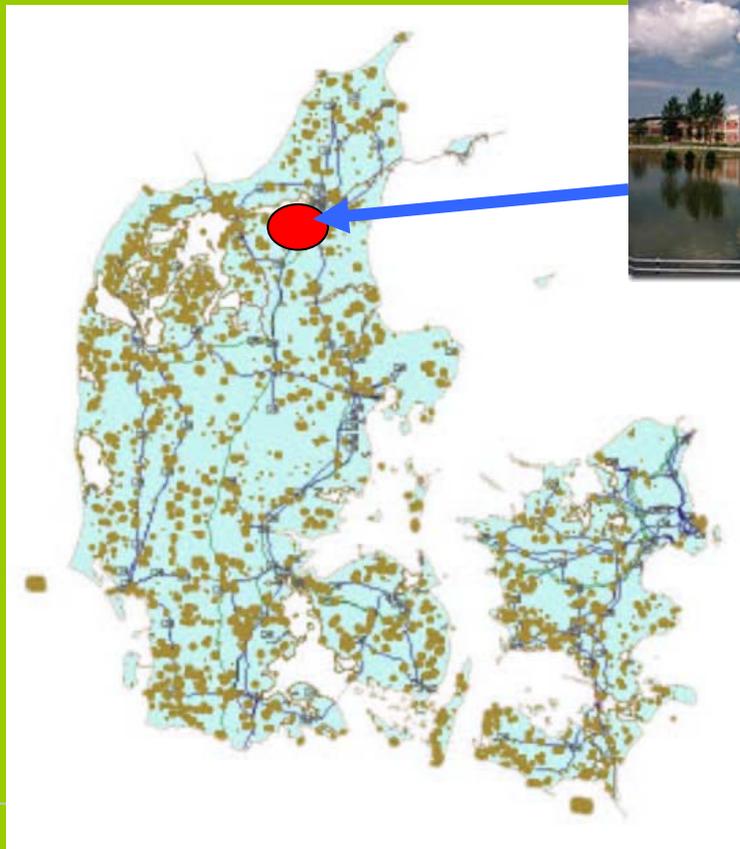
Concrete institutional economy and climate policy

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16 September 2008

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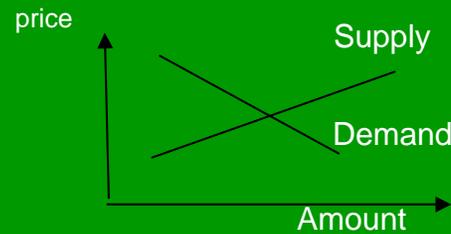


Present climate policy tendency ("This market policy will do it" belief)

Direct market tools

- EU CO2 quota/system/ TGC
- Fuel taxes, CDM,
- Subsidies, etc.

The present Market construction



A systematic climate/energy policy is necessary and possible

- In the last decade there has been a strong tendency to market the “believe” that climate and energy policy can rely only on “**direct market tools**” such as CO2 trading, CDM, JI, Green Certificate trading, etc.
- But the concrete institutional conditions in which the markets are embedded in most cases represents “**indirect market forces**” that **outdo** the possible innovation effects of the “**direct market tools**”.
- **Therefore we must (re)introduce an energy policy that includes both the “direct market tools” and the “indirect market tools” in which the market is embedded.**
- **This is what this presentation is about.**

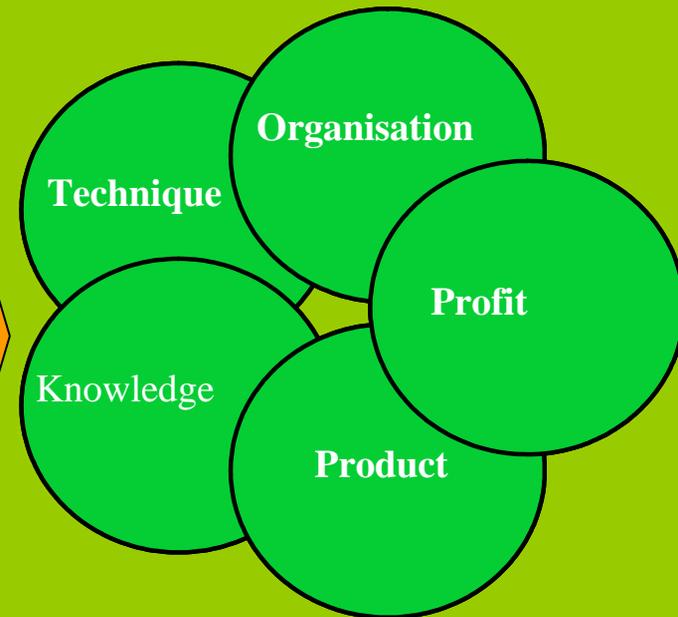
1. The technological change is radical, so we are often dealing with *winn lose situations*.

Fossil fuel/uranium



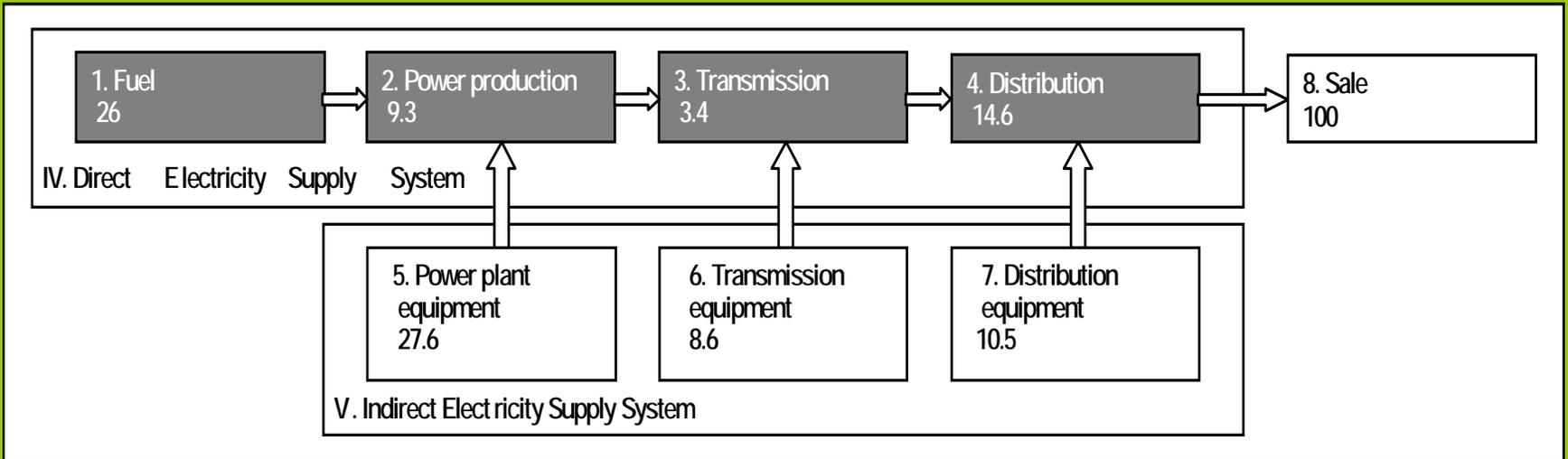
Radical technological change

Renewable Energy Conservation

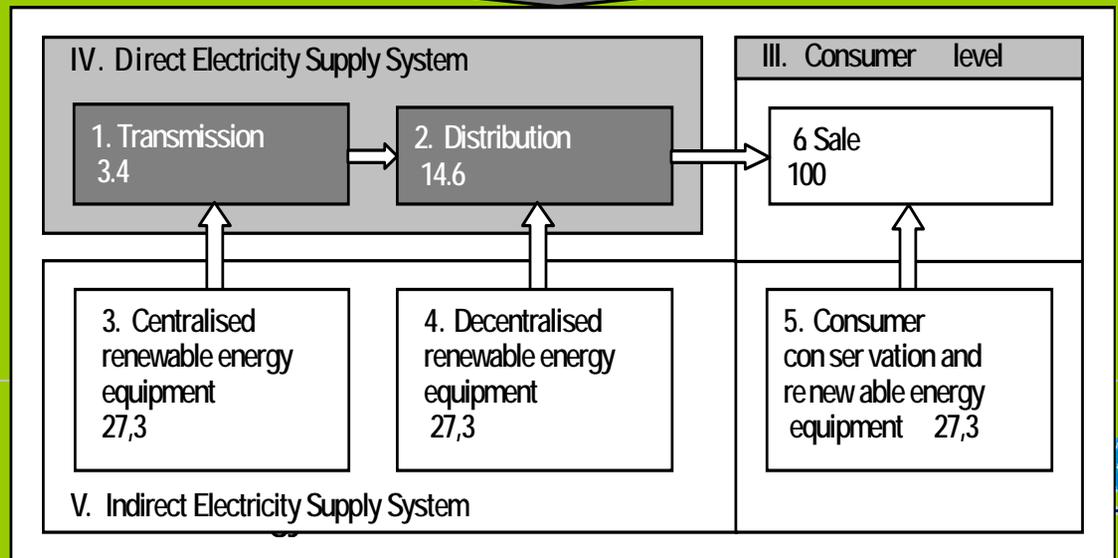
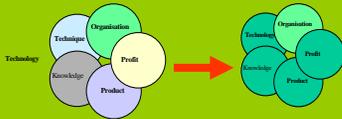


Making the strong lose and the weak win. That is the present challenging task of Government!!

The losers in a change from old fossil fuel and uranium to new green technology:



From fossil to renewable energy



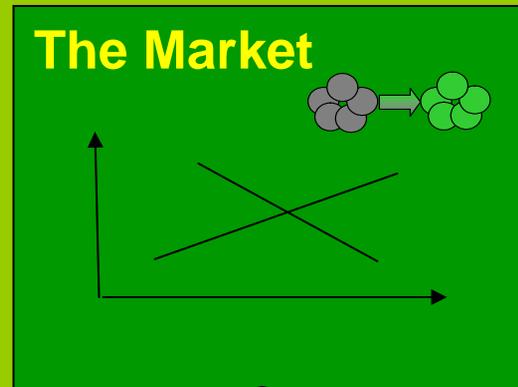
Consequently the following policy principles.

- 1 There is a need for open access to new actors (remove barriers to entry).
2. A policy also influencing the “indirect market” must be established.
3. An innovative democratic process has to be developed (making the “strong” lose and the “weak” win).

This has happened before and also is possible in the future.

2. Economic models and understandings of the market

Neoclassical economy



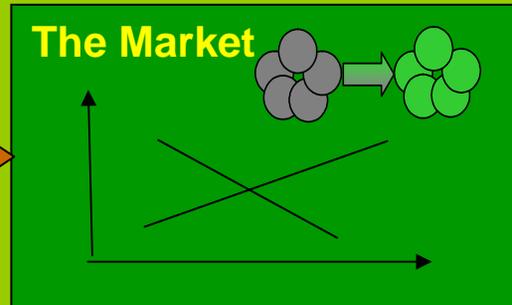
Theoretical institutional assumptions:

- Many suppliers
- Many buyers
- Full information
- Rational buyers
- All costs in prices
- etc

Climate policy and " applied neoclassical" economy.

I. Direct market tools ("Neoclassical" element)

- EU CO2 quota/tax system, ETS, CDM, JI
- Fuel taxes
- Subsidies, etc.



II. Indirect market tools

- General EU directives/"liberalisation"
- Establish "competition"

Institutional conditions

Trying to establish a competitive market.

Problems with applied neo- classical economics

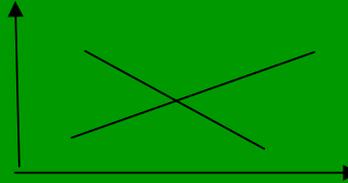
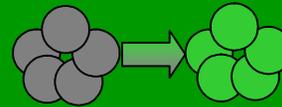
1. Only general market changes.
Tax, CDM, JI, carbon trading, etc.
2. Some general institutional changes /EU directives for competition etc.
3. No willingness to systematic analyse the needs for concrete institutional changes. ("The market functions ok" assumption)
4. Therefore it cannot - and does not aim at - be used as base for the needed construction of specific institutional changes.

The need for a concrete "institutional political economy" climate policy

I. Direct market tools

- EU CO2 quota/system/ETS
- Fuel taxes
- Subsidies, etc.

The present Market construction



II. Indirect market tools

Institutional conditions or indirect markets, for instance:

- Historic/present tax structure
- Construction of Nordpool,
- Innovative markets?
- University system
- Political procedures
- Consultancy systems?

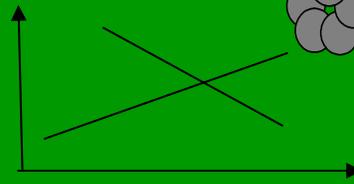
-Etc.

Climate policy synthesis of "concrete institutional" - and "neoclassical" economy.

I. Direct market tools

- EU CO2 quota/tax system
- Fuel taxes
- Subsidies, etc.

The present market



Goals

- Cost efficiency
- Climate efficiency
- Resource efficiency
- Democratic efficiency
- Innovation efficiency

II. Indirect market tools.

- Changing tax structure fundamentally
- Changing ownership models
- Energy offices, test centers, pilot plants.
- Establishing innovative markets
- Etc

Institutional conditions

- Nordpool market design
- Tax structure
- Ownership models
- Educational system ,etc

III. Democratic reforms- innovative democracy

Democratic procedures, openness of information, advisory groups, public press etc.

Parliamentary system

Ministeries, administration, etc.

Old economical-/market dependent lobbyists.

Established old companies and interests.
Oil, coal, nuclear, indu ass.
Trade unions, etc.

New economical-/market dependent lobbyists

Conservation-, solar-, wind-wave-biomass- technologies

Economical-/market independent lobbyists

-Climate-/energy NGO's
-Public debate groups
Etc.

3. The renewable energy example: Two renewable energy Governance models competing in the EU

1. The "Political quota-/certificate price market" model, where the amount of RE is decided upon by politicians and the price is determined on the market.
2. The "Political price-/amount market" model ("feed in model") , where politicians determine the price of RE and the quantity of RE is determined on the market.

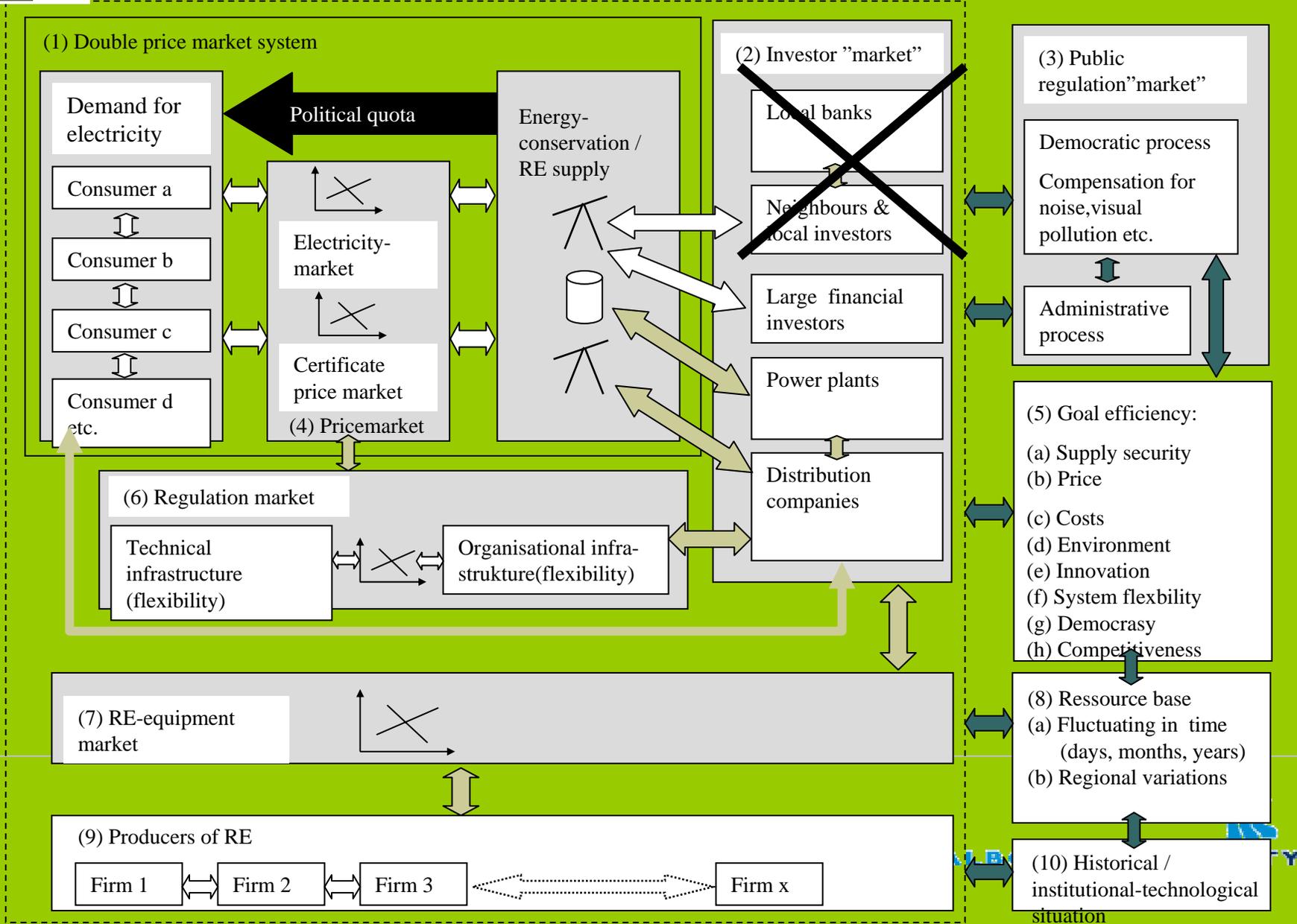
(One is political prices and the other political quotas- none of them are more market/neo-classical than the other!)

Analytical approach

1. Necessary to analyse the concrete institutions in which the markets are embedded.
2. Establishment of an analytical macro-context
3. Establishment of analytical micro-contexts
4. Discussion of the reliability/usefulness of the established macro-and microcontexts.

A concrete "institutional political economy" RE context

The many markets and renewable energy

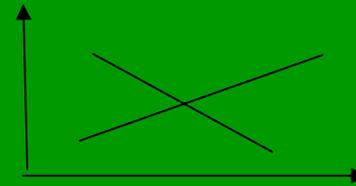
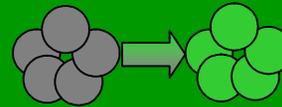


RE support schemes- ex.

Direct market tools

CO2 payment

The present Market construction



Indirect market tools

- New area planning procedures.
- "Feed in" tariff/ETS
- Local-/regional ownership
- Redesign Nordpool
- "Open access" to cogeneration systems
- Innovative markets
- Etc

Institutional conditions or indirect markets, for instance:

- Historic/present tax structure
- Construction of Nordpool,
- Innovative markets?
- University system
- Political procedures
- Consultancy systems?

-Etc.

4. The car example

The insignificant effects of a CO2 price on traffic decisions.

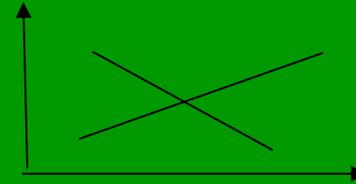
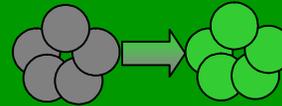
20.000 km/year	Skoda/24 km/liter/110 g CO2/km Price:200.000 Dkr	Peugeot/15 km/liter/176 g CO2/km Price:400.000 Dkr
Fuel plus O&M cost per km Dkr	0.72	1.1
Taxation/insurance per km	0.6	1.0
Amortisation (7% 10 years)	2.15	4.3
Total costs per km before CO2 quota	3.47 (0.72 variable)	6.4 (1.1 variable)
CO2 costs per km (250 Dkr/tons) (32 EURO)	0.0275	0.044
Cost per km after CO2 quota costs	3.50 (0.75 variable)	6.45 (1.15 variable)

Traffic policy ex. – links to RE.

Direct market tools

CO2 payment 32
EURO/tonnes.

The present Market construction



Indirect market tools

- KM tax instead of "garage tax
- Supporting electric cars
- Better public transportation
- Innovative markets
- Etc

Institutional conditions or indirect markets, for instance:

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-Etc.

Conclusion the car example

1. Influencing the “direct market” with a CO₂ price of 32 EURO per ton has no effect on the selection of cars.
2. Influencing the “indirect market” by a basic change in tax structure (and public transportation) can have a significant influence.

5. The cogeneration heat market - RE transition example

Heating expenses in Aalborg coal- and waste based cogeneration plant.

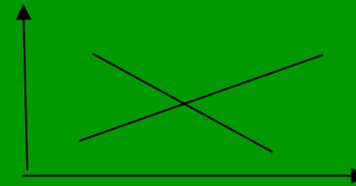
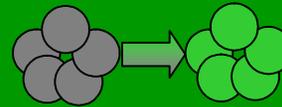
140 m2 house	
Variable payment	4.000 Dkr.
Fixed payment	3.000 Dkr.
Total payment before CO2 quota	7.000 Dkr.
CO2 payment (250 Dkr/ton)	Around 250 Dkr.
Total payment after CO2 quota.	7.250 Dkr.(4.250 variable)

Cogeneration policy. Supporting transition to RE and conservation

Direct market tools

CO2 payment 32
EURO/tonnes.

The present Market construction



Indirect market tools

- Abolish fixed payment
- Innovative markets
- Open access for Renewable Energy heat in cogeneration systems,
- Consultancy services to the public, etc.

Institutional conditions or indirect markets, for instance:

- Historic/present tax structure
- Innovative markets?
- University system
- Political procedures
- Consultancy systems?
- Etc.

The needed political process

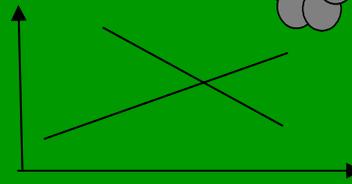
Innovative democracy or a
"concrete institutional economy"
approach to radical technological
change

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Innovative democracy- the potential comparative advantage.

1. Bottom up political discussions – for instance via the "green cities", etc.
2. Top down "market design" policies via communication with the "Green cities" etc.
3. Bottom up- decentralised- action. Via for instance local organisations such as "Green Cities", local distributions comp., local NGOs etc.