

**Global security and natural resources :
geopolitical aspects of energy security**

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ENERGY SECURITY

***ENERGY SECURITY* = stable, cheap & environmentally friendly energy cycle (primary supplies + transportation + refining + transformation + final consumption)**

***ENERGY SECURITY* =**

- (1) minimum volume risk +**
- (2) minimum price risk**

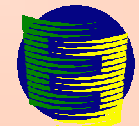
EVOLUTION OF *ENERGY SECURITY* INSTRUMENTS:

- (1) colonies + traditional concessions,**
- (2) military instruments + modernized concessions, PSAs, RSCs,**
- (3) strategic reserves + stocks,**
- (4) international law instruments**

EFFECTIVE *ENERGY SECURITY* INSTRUMENTS are different at different stages of energy markets development:

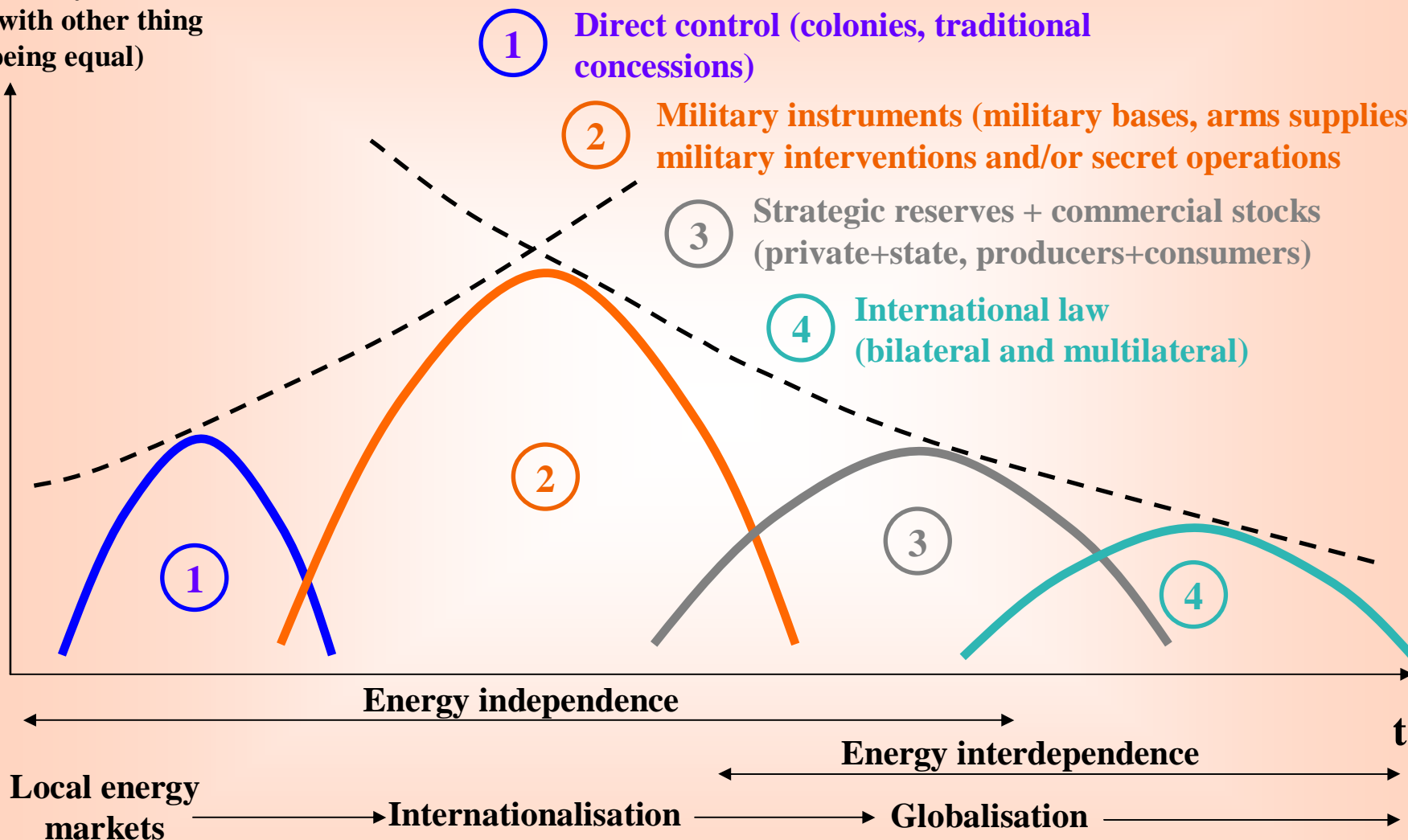
- from monopoly to competition as a driving force of energy markets development,**
- from energy independence to energy interdependence,**
- from local markets of individual energy resources to global energy market**

Further to growth of energy interdependence, international law becomes more and more effective (relatively cheap per unit of supplies/final consumption) instrument of providing *energy security*



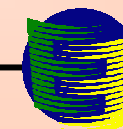
EVOLUTION OF ENERGY SECURITY MECHANISMS AND COST OF ENERGY SECURITY

Cost of “energy security”
(with other thing being equal)



PARTICULAR MECHANISMS OF DIMINISHING VOLUME AND PRICE RISKS UNDER DIFFERENT ENERGY SECURITY INSTRUMENTS

Mechanisms of diminishing:	Colonies	Military instruments	Strategic reserves + stocks	International law
- volume risk	Direct control of supplies (traditional concessions)	Modernized concessions, PSAs, risk-service contracts (LTC for duration of agreement between host-country & foreign company)	Producer states production & export quotas + strategic reserves + stocks in both producer and consumer states (idle producing capacities, float tanker storage vs. SPR, government & company owned commercial stocks) + LTCs	Diversified energy supply infrastructure (multiple supplies concept) + consumers with switching (competitive supplies)
- price risk	Stable & low posted prices + transfer pricing + cost-plus (isolated projects)	Stable & low posted prices + transfer pricing + cost-plus (isolated projects)	Spot + forward pricing = unstable prices; increased price volatility to be compensated by producers export quotas (major exporters = swing producers) + consumers stocks regulation policy + escalation formulas	Exchange pricing = futures + options = unstable prices; increased price volatility to be compensated by hedging (derivatives)
Basis for pricing (traded item)	Physical energy (oil, gas)	Physical energy (oil, gas)	Physical energy (oil, gas)	Paper energy (oil, gas contract)
Driving force of market development	Monopoly (individual consumer states/cartel of private companies)	Monopoly (cartel of private companies)	Monopoly (cartel of producer states/state companies)	Competition



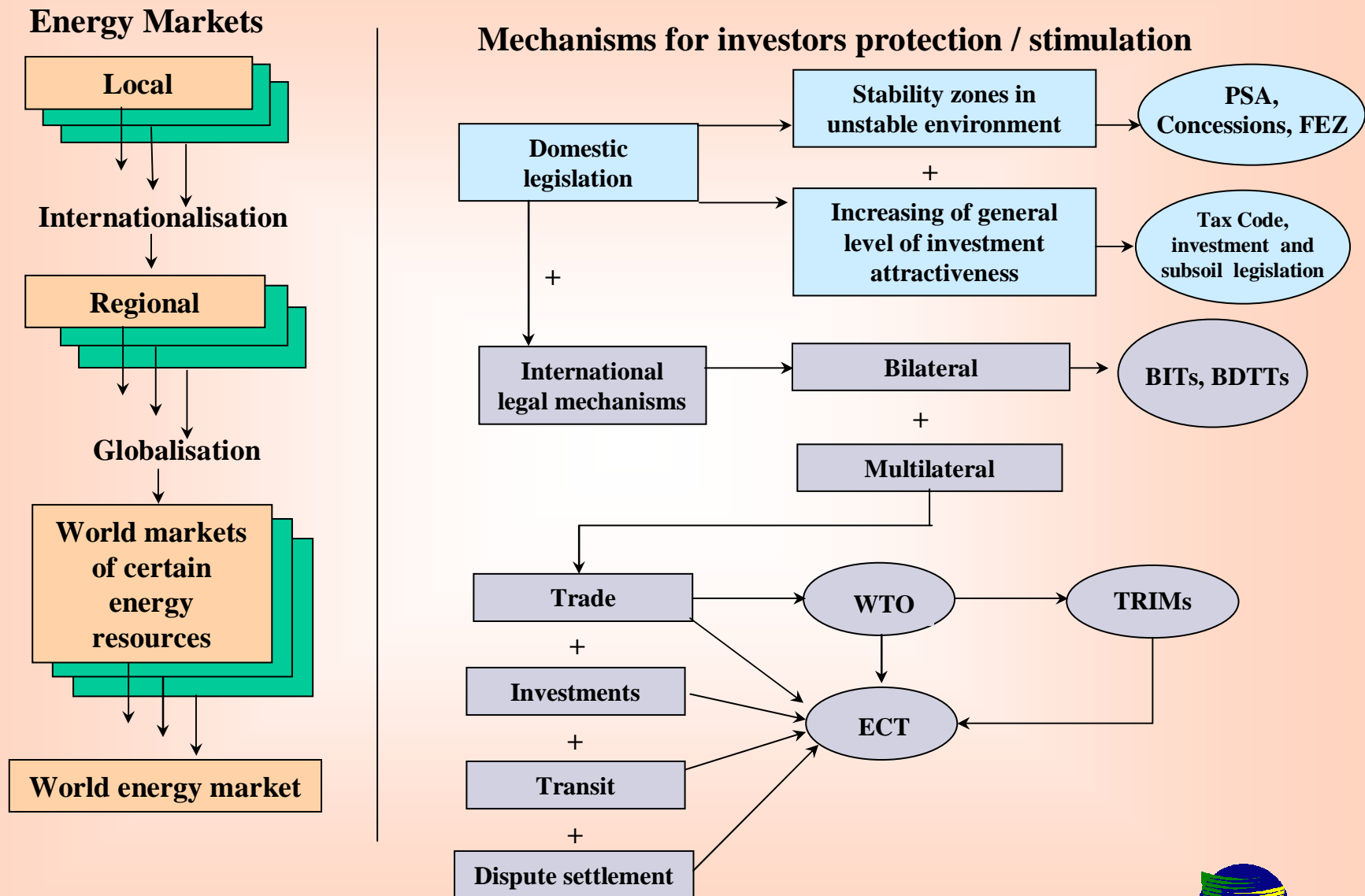
Evolution of pricing systems on international petroleum market



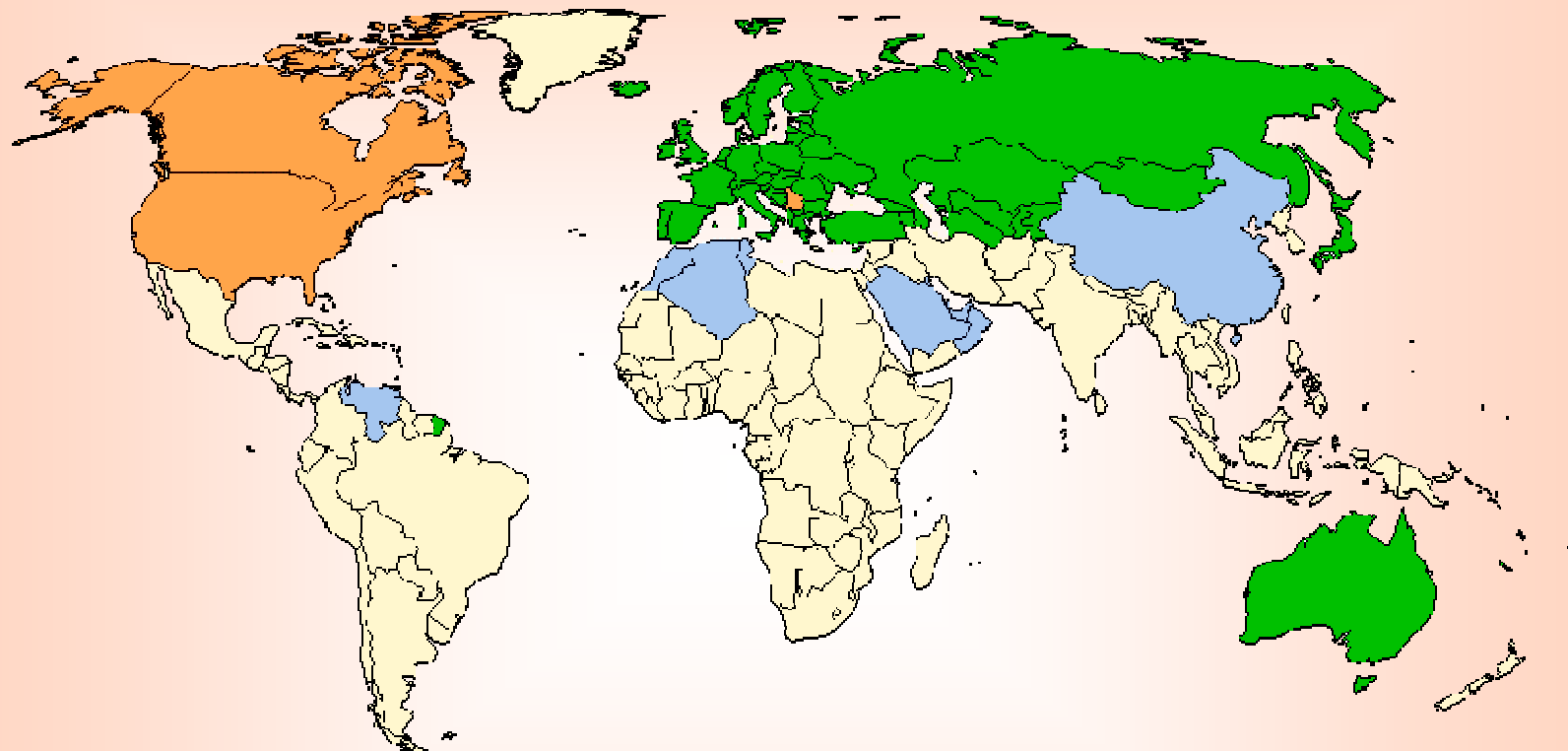
STOCKS OF IEA NET IMPORTERS



DEVELOPMENT OF ENERGY MARKETS AND MECHANISMS FOR INVESTORS PROTECTION / STIMULATION

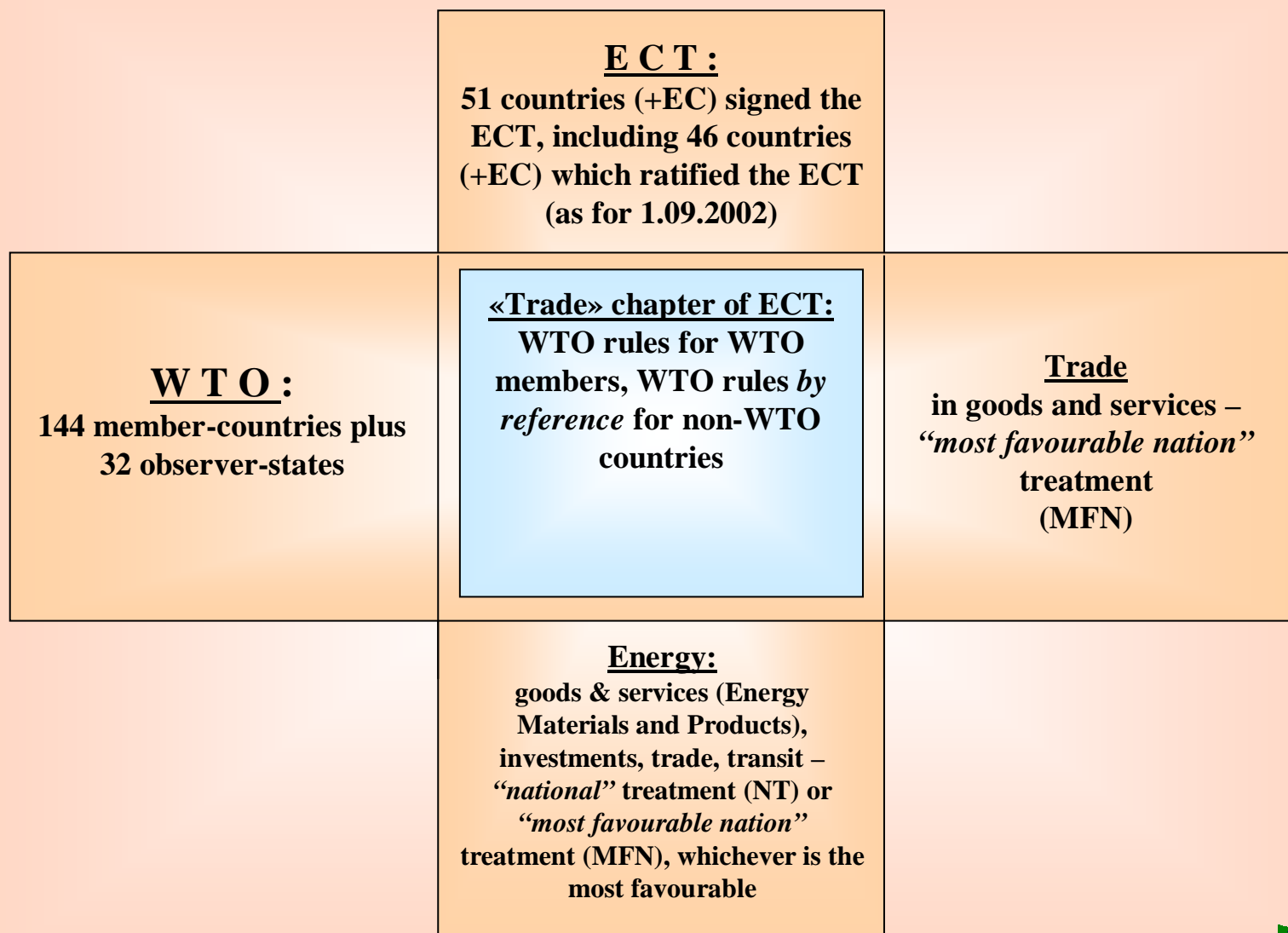


ENERGY CHARTER TREATY: GEOGRAPHY



- Energy Charter Treaty Signatory States (1994)
- Observer States that have signed the European Energy Charter (1991)
- Other Observer States

CORRELATION BETWEEN GEOGRAPHICAL SCOPE AND ACTIVITY TARGET OF ECT AND WTO



ROLE OF THE LONG TERM CONTRACTS

At initial stages of market development LTCs plays role of (the then almost absent) legislation, i.e. contract secure investors from common & specific risks:

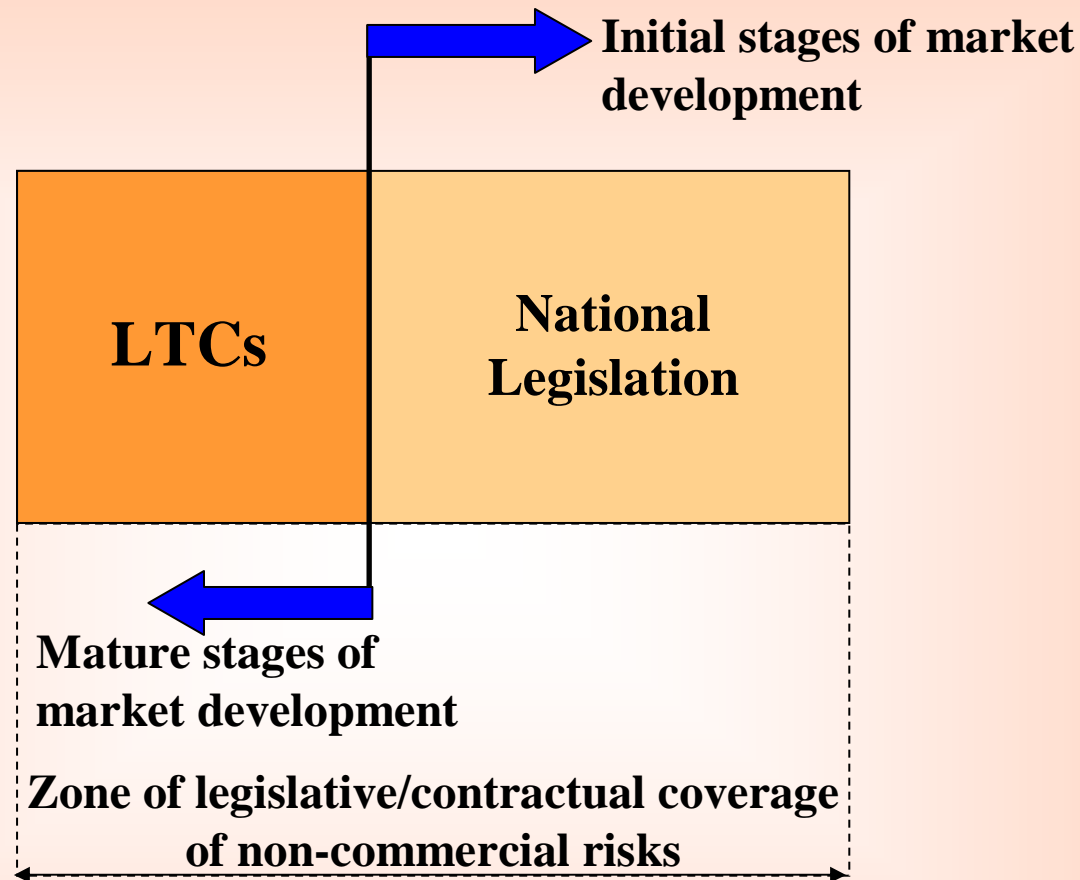
- (a) common risks = due to low state of development of legal environment,**
- (b) specific risks = related to particular energy supply projects**

LTC = analog to PSA = anclave of stability = effective way to diminish project financing risks

Two ways of further development:

- (1) framework of LTCs (analogy to BITs), but:
high probability that due to confidentiality clauses conditions of different LTCs will differ => model LTC (?)**
- (2) development of legislation that will cover major common risks, previously covered by LTCs**

Energy markets development: LTCs vs. national legislation



Further to development of national legislation, LTC-zone will diminish due to objective reasons, but some effective niche for LTCs will be left anyhow

GAS: DIFFERENT PROJECTS – DIFFERENT CONTRACTS

(1) New projects in mature regions with existing infrastructure, with available transportation capacities (usually less capital-intensive projects, relatively small to the existing market) =

(a) short-term contracts (“take and/or pay”) – for the duration of payback period (?)

(b) spot deals – when payback period is over (?):

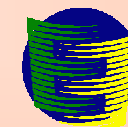
- dated
- forward
- futures

Regions: Western, Central & Eastern Europe

(2) New projects in new regions with no/lack-of infrastructure for both production and transportation (usually more capital-intensive projects, relatively big to the existing market) =

(a) long-term “take and/or pay” contracts

Regions: Russia, CIS, Asia

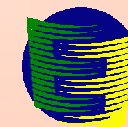


GAS: LONG-TERM TAKE AND/OR PAY CONTRACTS (LTC TOP) AND PROJECT FINANCING RISKS

$$\text{Financing} = f(\text{revenue}) = f(\text{volume} \times \text{price})$$

- (1) LTC TOP = mechanism of supply risks («volume» risks) reduction**
 - (2) LTC TOP + adequate pricing mechanism = mechanism of “price” risks reduction:**
 - prior to exchange pricing: escalation formulas**
 - exchange pricing: futures + hedging**
- (1) + (2) = mechanism of project financing risks reduction (long-term capital-intensive Greenfield projects, i.e. in new regions with no/lack-of production & transportation infrastructure)**
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LTC TOP as a mechanism of risks reduction related to investments into new (Greenfield) gas projects yet has no alternatives at the emerging energy markets



LONG-TERM CONTRACTS

Item 22: “Long-term contracts will continue to be an important part of the gas supply of Member States and should be maintained as an option for gas supply undertakings in so far as they do not undermine the objectives of this Directive and are compatible with the Treaty, including competition rules.”

Source:

Amended proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directives 96/92/EC and 98/30/EC concerning rules for the internal markets in electricity and natural gas

ECT & LEGISLATIVE PRIORITIES OF PRESIDENT PUTIN

