

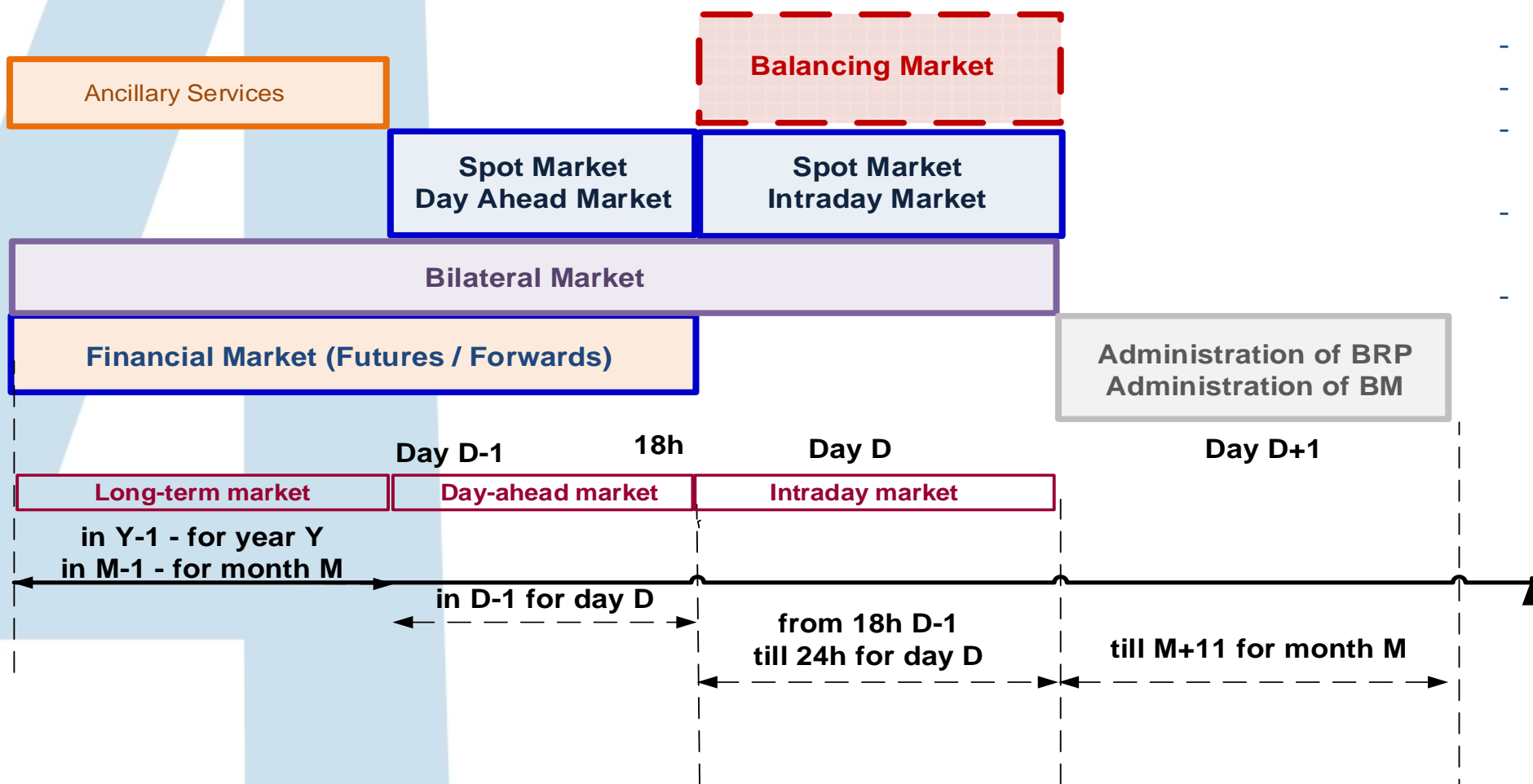


Unutar-dnevno tržište električne energije u Srbiji

Implementacija kontinuiranog unutar-dnevnog tržišta električne energije u Srbiji

Dejan Stojčevski, Adex group SEEPEX

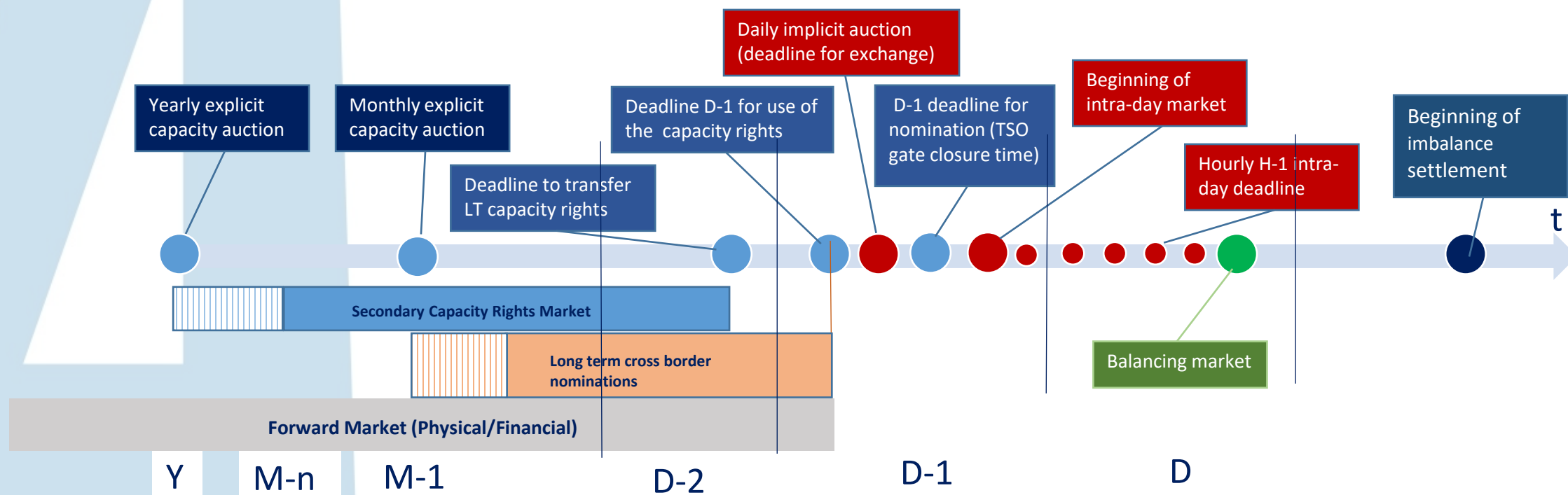
Tržište električne energije - Vremenski okvir



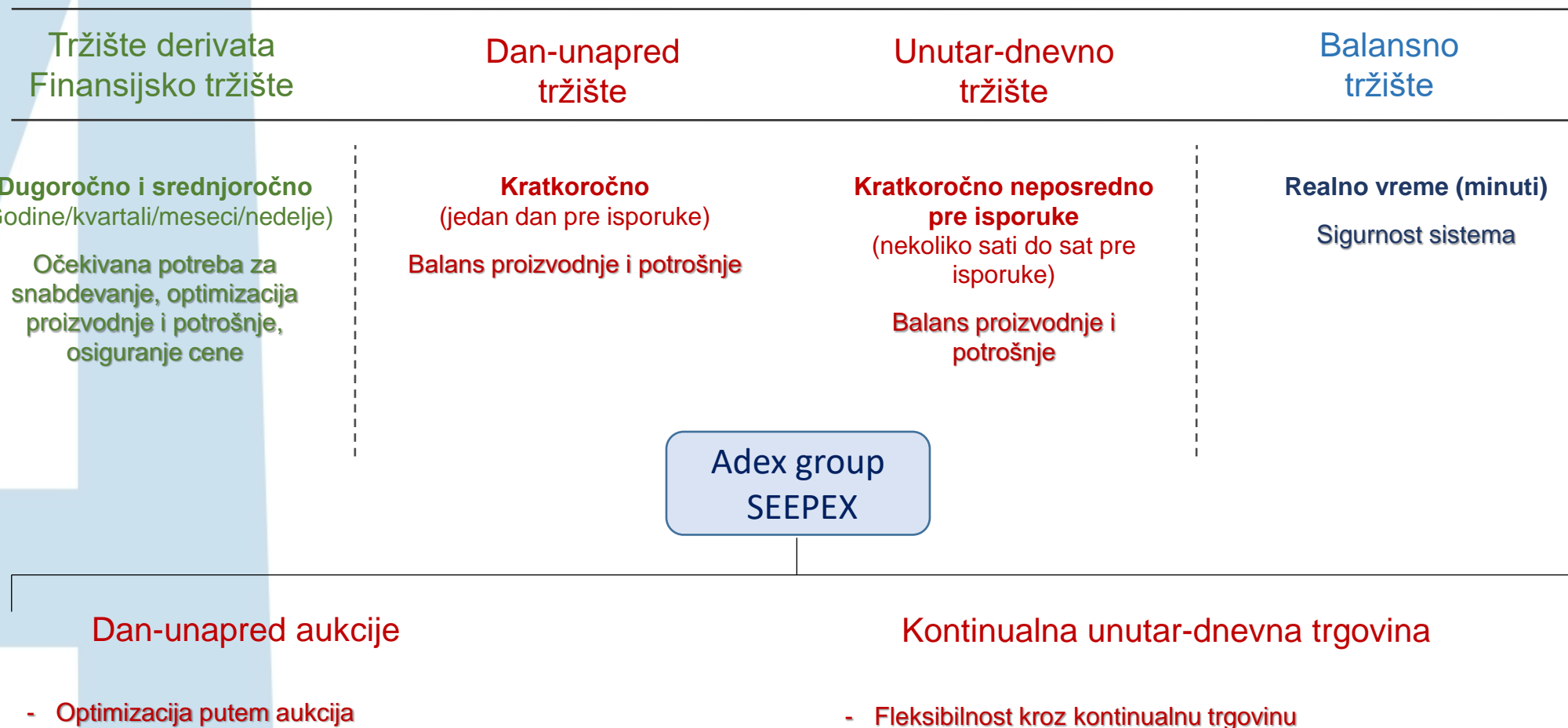
Ciljevi uspostavljanja tržišta:

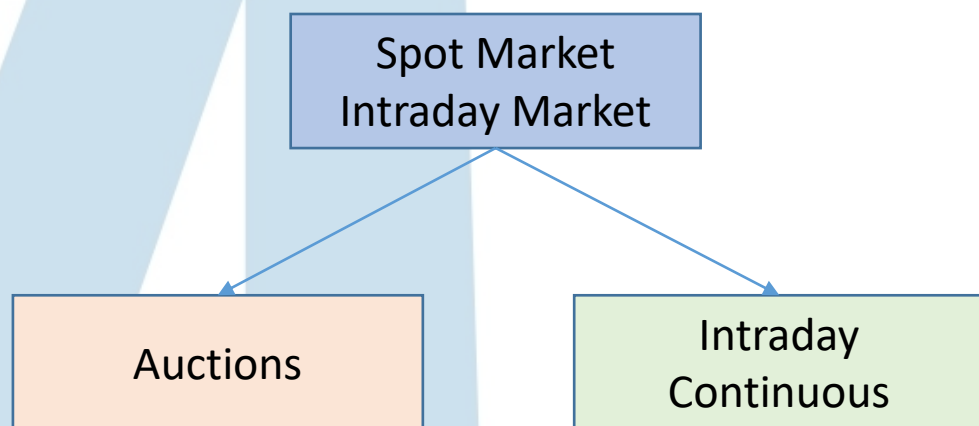
- Sigurnost snabdevanja
- Povećanje konkurentnosti
- Eliminacija ili ograničenje monopola
- Nema diskriminacije, transparentnost, isti uslovi za sve
- Integracija u regionalno i jedinstveno interno evropsko tržište el. en.

Vremenski tok trgovanja učesnika na liberalizovanom tržištu energije



Uloga organizovanog tržišta na vremenskom toku trgovanja električnom energijom





Prednosti rada na organizovanom tržištu:

- Isti uslovi za sve učesnike (prodaje se berzi i kupuje se od berze)
- Referentna cena – ista cena za sve (dan-unapred)
- Cena je javna i dostupna
- Finansijska sigurnost svake zaključene transakcije
- Garantovana fizička isporuka

Benefiti implementacije lokalnog **unutardnevnog tržišta** :

- Novi produkt na srpskom tržištu
- Balansiranje net pozicija kupaca i prodavaca unutar dana što smanjuje potrebu za aktiviranjem balansne energije
- Dodatna mogućnost za trgovinu
- Lakša integracija obnovljivih izvora
- Mogućnost pokrivanja odstupanja usled neočekivane promene u potrošnji, proizvodnji i ispadima

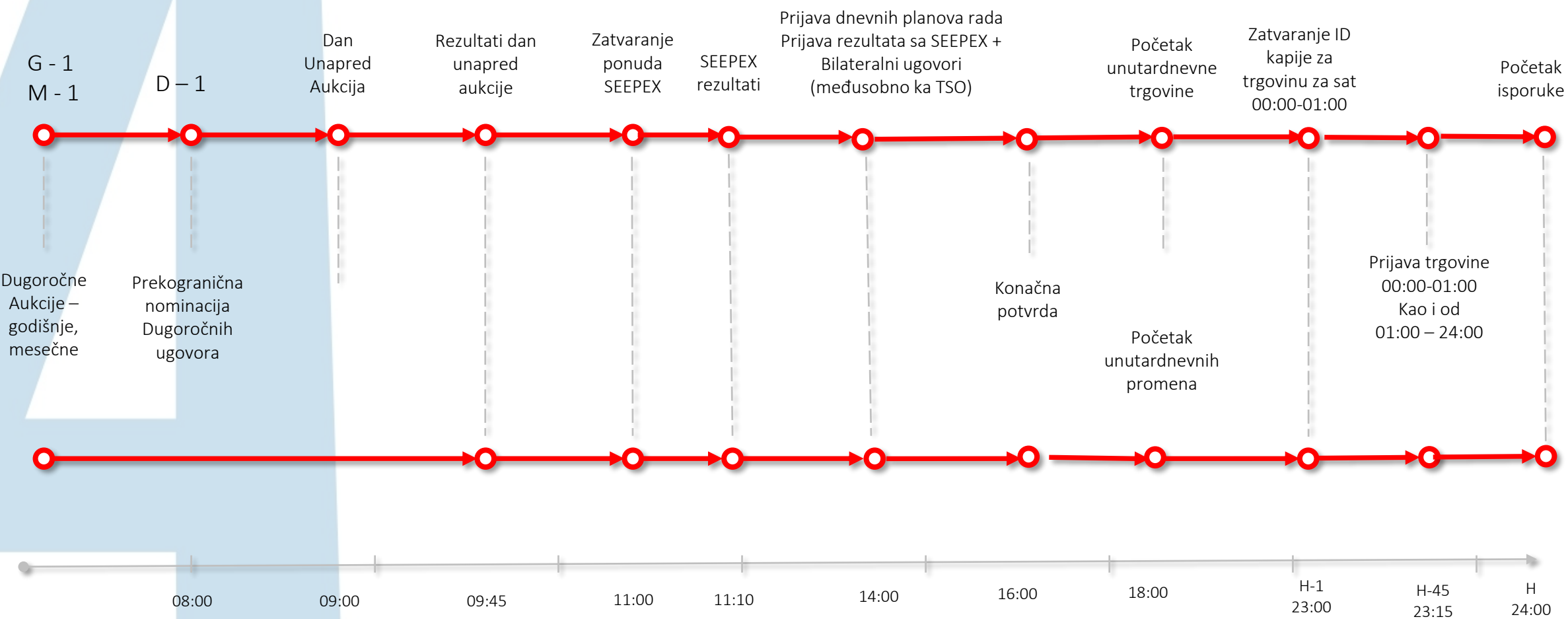
Benefiti spajanja **dan-unapred** tržišta u jedinstveno evropsko tržište:

- Povećanje sigurnosti snabdevanja
- Dobijanje jedinstvene regionalne referentne cene električne energije na veleprodajnom tržištu
- Povećanje likvidnosti tržišta
- Povećanje obima trgovine i prihoda
- Optimalna iskorišćenost međuzonskih prenosnih kapaciteta
- Efikasnija integracija obnovljivih izvora električne energije
- Uspostavljanje Srbije kao regionalnog čvora u tranzitu električne energije uzimajući u obzir geografski položaj sa osam granica i odlično stanje prenosne mreže.

Benefiti spajanja **unutardnevnog** tržišta u jedinstveno evropsko tržište:

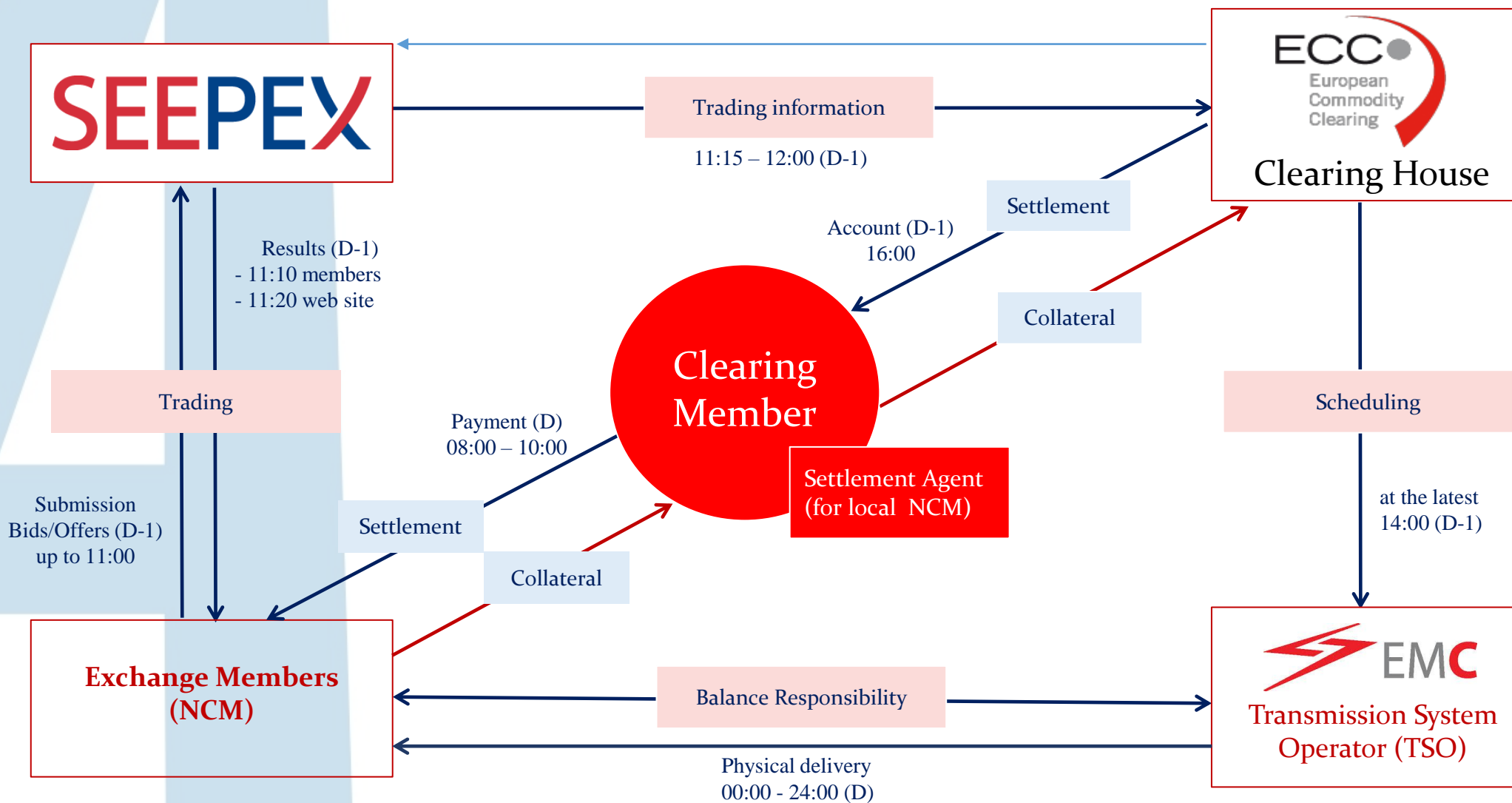
- Srpsko tržište odmah postaje likvidno
- Trgovina sa celom Evropom
- Promovisanje konkuretnosti učesnika na tržištu
- Balansiranje net pozicija kupaca i prodavaca unutar dana što smanjuje potrebu za aktiviranjem balansne energije od strane EMS
- Upravljanje i pokrivanje debalansa usled neočekivane promene u potrošnji, proizvodnji i ispadima
- Lakša integracija i investiranje u obnovljive izvore
- Optimalna iskorišćenost međuzonskih prenosnih kapaciteta

Dnevni proces trgovine



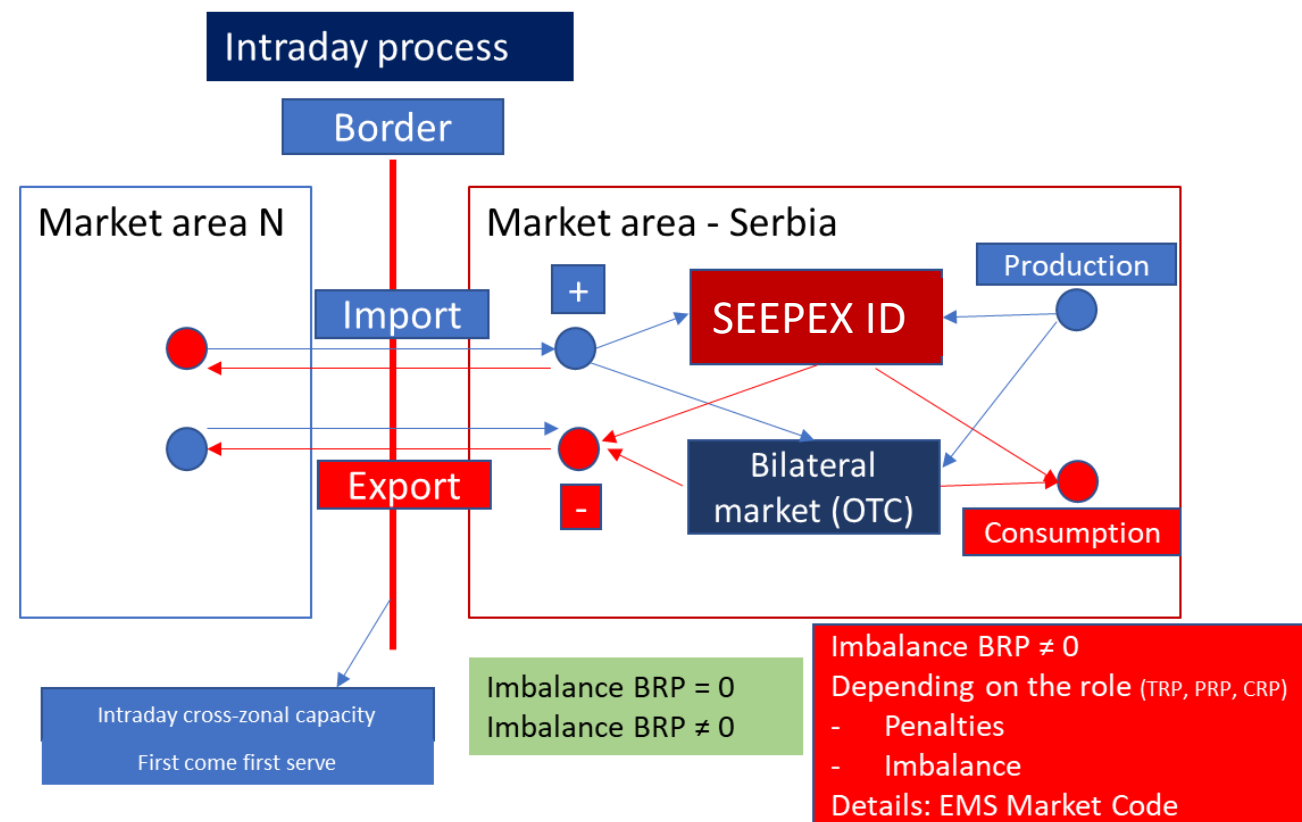
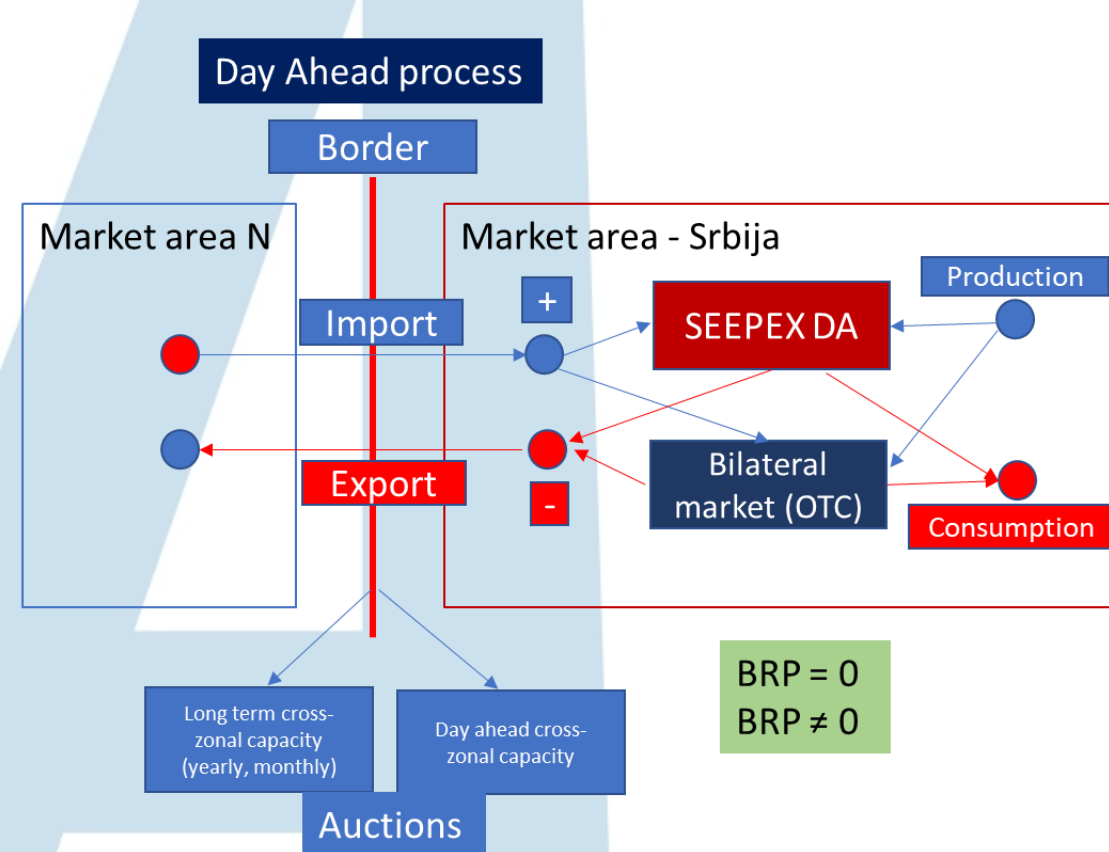
Promena vremena zatvaranja kapije za dan-unapred tržište

– Poslovni proces GCT – 11:00



Rad u izolovanom radu – izazovi i mogućnosti

Procesi : Dan-unapred i unutar dana



Balance group
imbalance

$$Imb = Sch_{pos} + Metered_{pos} - Bal.en.$$

Ugovor o trgovini

- Između Učesnika i SEEPEX
- Reguliše odnos u smislu odgovornosti (trgovine, ponašanja na organizovanom tržištu), zahteva (tehničkih, organizovanja treninga trgovaca) i legislative

Non-Clearing ugovor

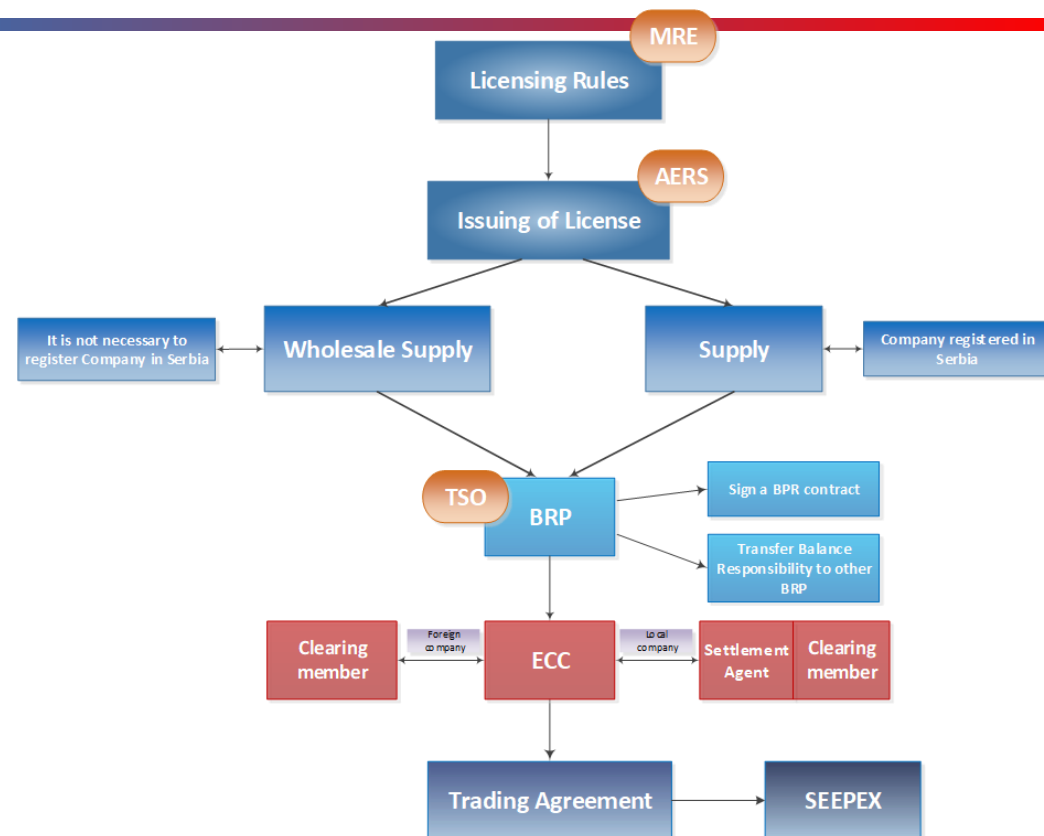
- Između ECC, Kliring člana i Učesnika
- Reguliše odnose u vezi kliringa i finansijskog poravnanja

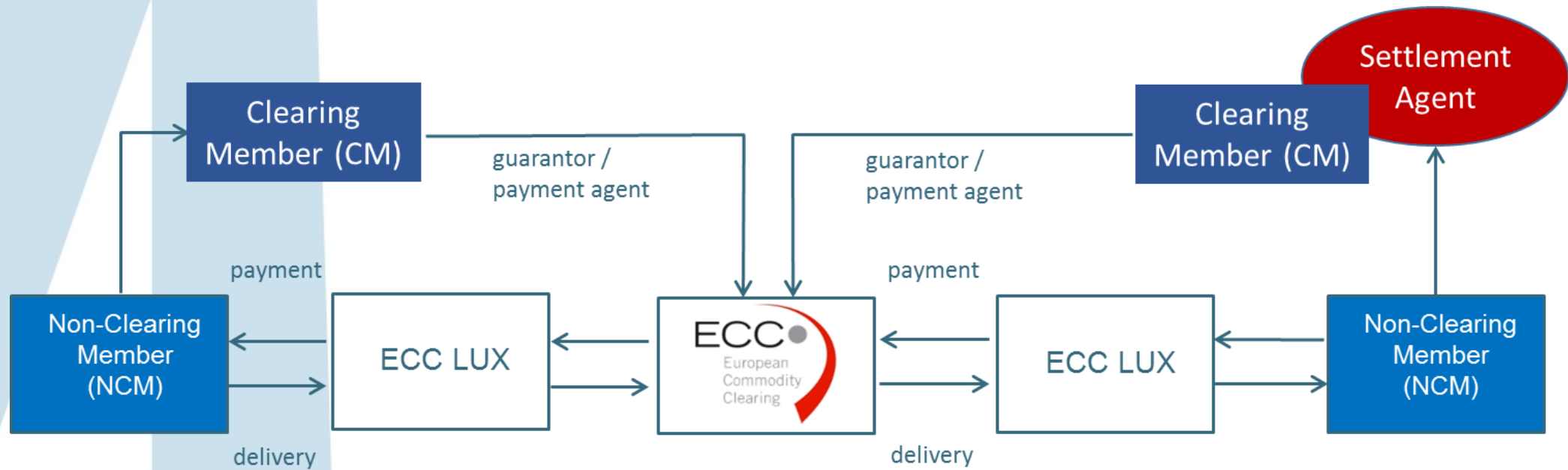
Ugovor o Balansnoj odgovornosti

- Između Učesnika i TSO
- Reguliše sve ugovorne obaveze između Učesnika i TSO koje se odnose na poravnanje debalansa balansne grupe

Unutardnevno tržište

- Za postojeće učesnike na SEEPEX : Aneks ugovora o trgovini
- Rešavanje pitanja učešća sa ECC i Klirinškim članom za unutar-dnevnu trgovinu





SEEPEX Day-Ahead 60 min Auction (11:00 CET, D-1)	
Trading Procedure	Daily Auction
Trading days	Year-round
Tradable Contracts (Expiries)	1 hour of the day Hour 01: the period between midnight and 1:00 Hour 02: the period between 1:00 and 2:00, and so on and so forth Hour 24: the period between 23:00 and midnight
Opening of the Order Book	24 hours per day starting forty five days before the Delivery Day
Closure of the Order Book	Daily at 11:00
Publication time	As soon as possible from 11:10
Clearing and Settlement	Trade information transmitted by SEEPEX to the central counterparty ECC AG for Settlement of the Contracts
Delivery procedure	Nomination by ECC and by the relevant Balance Responsible Parties to the TSO
Admissible Orders	On the day of the switch from summer time to winter time, hour 03 is divided in two hours that can be traded separately. On the day of the switch from winter time to summer time, hour 03 cannot be traded.
Minimum and maximum prices	0 € / 4,000 €
Minimum and maximum prices for triggering the second auction	0.01 € / 2,400.00 €
Price characteristics	Orders are submitted in Euro per MWh to one decimal place. The Market Clearing Price is returned to two decimal places.
Quantity characteristics	In MW with one decimal digit.
Single-Contract Orders	
Minimum and maximum number of price/quantity combinations for Single Contracts Order	2 and 256
Block Orders	
Definition	Order on one or several combined Expiries with a minimum of one Expiry on the same Delivery Day. Expiries depend on each other in their execution. The Exchange Member is not restricted in the determination of the Block Orders.
Specific conditions	<ul style="list-style-type: none"> • For each block a minimum acceptance ratio (any value between 0 and 1) is entered and applied. • The Maximum volume for a Block Order is 30 MW • The Maximum of 10 Block Orders per portfolio and per Delivery Day can be entered by the Exchange Members

SEEPEX Intraday Continuous	
Trading Procedure	Continuous
Trading days	Year-round
Tradable Contracts (Expiries)	1 hour of the day (60min) 00-01: the period between midnight and 1:00 01-02: the period between 1:00 and 2:00, and so on and so forth 23-00 the period between 23:00 and midnight
Opening of the trading session	24 hours a day (60min) 60min Contracts for Delivery on the next day D open at 18:00 on the day D-1
Closure of the trading session	60 minutes before Delivery in Serbia
Clearing and Settlement	Trade information transmitted by SEEPEX to the central counterparty for Settlement of the Contracts
Delivery procedure	Nomination by central counterparty and by the relevant Balance Responsible Parties to the TSO
Admissible Orders	On the day of the switch from summer time to winter time, hour 03 is divided in two hours that can be traded separately. On the day of the switch from winter time to summer time, hour 03 cannot be traded
Minimum price increment	0.01 €/MWh
Minimum volume increment	0.1 MW
Minimum and maximum price	0 € / 9,999.99 €
Minimum quantity	0.1 MWh
Maximum quantity	999 MWh
Single-Contract Orders and Block Orders	
Definition	Single Contract Orders combine a price and a quantity for an Expiry. Block Orders combine several Expiries with a minimum of two contiguous Expiries on the same Delivery Day which depend on each other in their execution. The Exchange Member is not restricted in the determination of the Block Orders.
Execution conditions	Single-Contract Orders and pre-defined Block Orders can be partially executed by default. The following execution restrictions can be used: "IOC" (immediate or cancel) or "FOK" (fill or kill). User-defined Block Orders cannot be partially executed. Therefore, the execution restriction "AON" (all or none) applies by default. By adding the execution restriction "IOC" (immediate or cancel), user-defined Block Orders become "market sweep" Orders and will be executed immediately, as far as possible against respective Single-Contract Orders. The minimum peak quantity for iceberg Orders is 1 MW.

		DA	ID
		DA	IDC
Membership	Admission	15000	
	Cessation	1000	
Clearing	annual		
Annual	fixed	10000 (6000 if already on ID)	10000 (6000 if already on DA)
Technical	connection set-up		
	standard (basic) access	8000 (4000 if already on ID)	8000 (4000 if already on DA)
	additional user access	3000	3000
	API user access		1500
	additional portfolio	2000	2000
Transaction	trading	0,095	0,14
	OTC		0,03
Training	Exchange trader	200	
	Exchange trader exam	100	
	Basic market design	300	
ECC clearing fees		0.02	0.05

Dan-unapred aukcije
08:30-17:00

Unutar-dnevna kontinuirana trgovina
09:00-17:00
Hotline: 24/7

Pravila organizovanog tržišta aukcije

- Pravila organizovanog tržišta
- Operativna pravila
- Kodeks ponašanja
- Ugovor o trgovini

Kliring

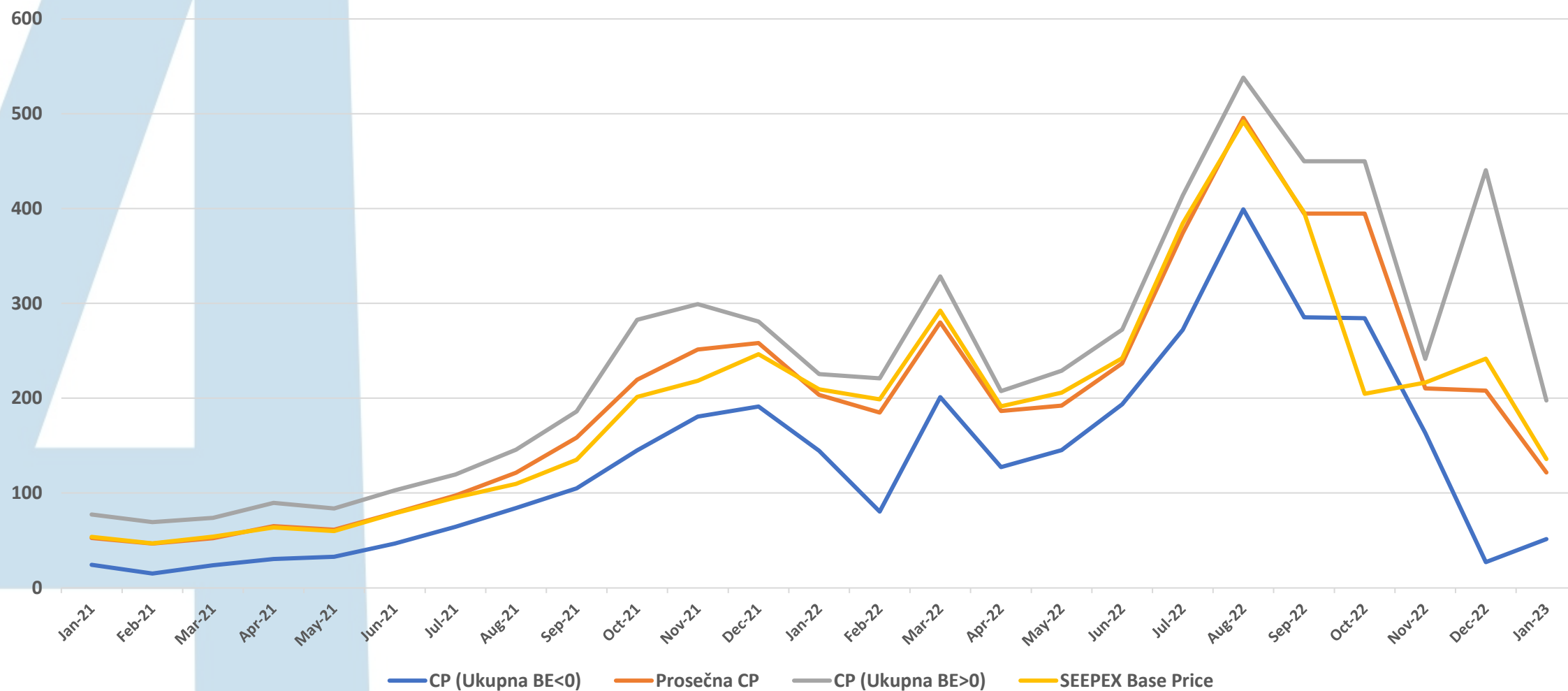
- ECC pravila

1	Member Testing		
1.1	<i>Member testing - M7 open for market participants</i>	10/04/2023	28/04/2023
1.2	<i>Member testing - helpdesk</i>	03/05/2023	17/05/2023
1.3	<i>Member testing E2E with nominations</i>	22/05/2023	02/06/2023
2	Contractual framework		
2.1	Preliminary Registration (local without ECC)	06/03/2023	28/04/2023
2.2	Registration of market participants for ID (ECC)	03/05/2023	16/06/2023
3	Go-live	19/06/2023	23/06/2023
3.1	Connectivity to production env	19/06/2023	20/06/2023
3.2	Go-live	21/06/2023	22/06/2023

- 8 granica
- 53 Balansno odgovornih strana
- 31 Učesnik na dan-unapred organizovanom tržištu

Year	Import [TWh]	Export [TWh]	Total internal bilateral trade on free market	Total consumption in Serbia [TWh]	Trade on SEEPEX [TWh]	SEEPEX share in total consumption [%]	SEEPEX share in internal bilateral market [%]
2016	15.52	17.84	15.63	39.84	0.52	1.31	6.65
2017	19.13	17.82	15.87	40.58	0.85	2.09	10.66
2018	17.35	16.84	20.54	40.16	2.32	5.78	22.46
2019	17.33	16.87	20.79	39.72	2.53	6.37	24.15
2020	17.97	18.82	26.27	39.94	2.82	7.06	21.28
2021	17.04	16.38	22.49	35.48	3.31	9.33	29.05
2022	16.36	13.55	18.52	35.06	3.21	9.16	33.79

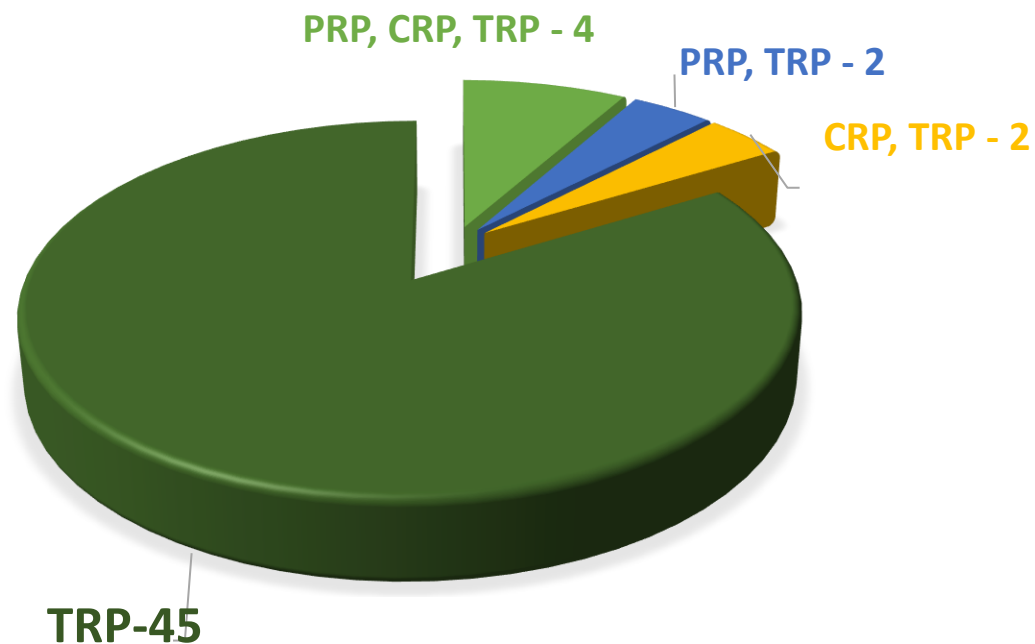
Cena poravnanja vs. prosečna cena na organizovanom tržištu



53 Balansno odgovornih strana

- Struktura balansnih grupa u Srbiji:

- **PRP** – Production Responsible Party – BOS odgovorna za prijavu proizvodnje
- **CRP** – Consumption Responsible Party – BOS odgovorna za prijavu potrošnje
- **TRP** – Trade Responsible Party – BOS odgovorna za prijavu transakcija





SEEPEx

Thank you!

Dejan Stojčevski

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