

Access Contracts Update

Focus on Storage



San Donato Milanese, 25 October 2018

Daniele Agosto → Access Contracts Manager



Seasonal Services
(**bundled** capacity)

Service/Product	When
<ul style="list-style-type: none"> ✔ Hydrocarbon ✔ Shipper Balancing ✔ Flat Modulation multiannual 	✔ Beginning of the Thermal Year
<ul style="list-style-type: none"> ✔ Peak Modulation <ul style="list-style-type: none"> – With seasonal or monthly injection ✔ Flat Modulation <ul style="list-style-type: none"> – With seasonal or monthly injection 	✔ Beginning/during the Thermal Year
<ul style="list-style-type: none"> ✔ Fast cycle 	✔ Beginning of the Thermal Year

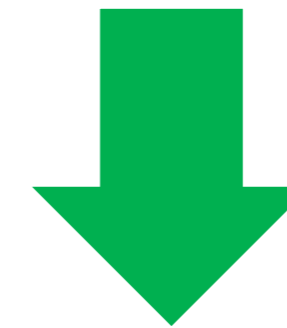
Short term products
(**unbundled** capacity)

<ul style="list-style-type: none"> ✔ Monthly Capacity <i>(space, injection & withdraw)</i> 	✔ Month M-1
<ul style="list-style-type: none"> ✔ Weekly Capacity <i>(space, injection & withdraw)</i> 	✔ Week W-1
<ul style="list-style-type: none"> ✔ Daily capacity <i>(injection & withdraw)</i> 	✔ Day D-1

increase the flexibility of the storage system and the type of products



- ✔ Meeting with shippers and business operators
- ✔ Guidelines sharing with ARERA
(Working Group "Esperti Stoccaggio")
- ✔ Update proposal of the Storage Code
(#34 now in consultation)



- ✔ **Fortnightly withdrawal capacity products**
(capacity in advance/postponements)
- ✔ **Dayahead - Intraday capacity products**
(withdrawal capacity)



*From November 2018
(Subject to ARERA approval)*

New Products → Key Points



Dayahead - Intraday capacity products

✔ Primary Capacity offered

- Made available by Stogit on spot basis

✔ Booking process

- Competitive auction
- Deadline 3:00 pm gas-day G

- Known in advance
- Always calculated with reference to the fortnight in auction
- Can be updated for every auction

Capacity in advance/ postponements

✔ Published information

- Auction calendar
- Fortnightly reference period
- Performance conversion matrix defined at the time of capacity supply
- Maximum withdrawal amounts (kWh/d) subject to advance/ postponement
- Stogit offered capacity (kWh/d) [*optional*]
- Cost function

✔ Booking process

- Competitive auction
- Subsequent sessions between advance and postponement of withdrawal capacity



Capacity in advance/postponements - Examples



CAPACITY IN ADVANCE		PURCHASES									
Conversion Matrix	1:1	1:1	1:1,2	1:1,2	1:1,6	1:1,6	1:1,8	1:1,8	1:2	1:2	
Technical Constraints [kWh/d]		14	12	12	8	8	6	6	5	5	
PURCHASES	SH_1			SH_2		SH_3	SH_4		SH_5		
Cost Function [€/kWh]		2	3	3	3	3	4	4	3	3	
Month	November - Month 1	December - Month 2		January - Month 3		February - Month 4		March - Month 5			
Fortnights	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	
POSTPONEMENTS		SELLS									
Conversion Matrix	1:1	1:1	1:0,8	1:0,8	1:0,6	1:0,6	1:0,4	1:0,4	1:0,2	1:0,2	
Technical Constraints [kWh/d]		14	12	12	8	8	6	6	5	5	
SELLS	SH_6		SH_7	SH_8			SH_1			SH_10	
Cost Function [€/kWh]		2	3	3	3	3	4	4	3	3	

Fortnightly reference period

Note: the technical constraints and the cost function are purely representative

Capacity in advance/postponements - Examples



CAPACITY IN ADVANCE		PURCHASES									
Conversion Matrix	1:1	1:1	1:1,2	1:1,2	1:1,6	1:1,6	1:1,8	1:1,8	1:2	1:2	
Technical Constraints [kWh/d]		14	12	12	8	8	6	6	5	5	
Cost Function [€/kWh]		2	3	3	3	3	4	4	3	3	
Month	November - Month 1	December - Month 2		January - Month 3		February - Month 4		March - Month 5			
Fortnights	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	
Conversion Matrix	1:1	1:1	1:0,8	1:0,8	1:0,6	1:0,6	1:0,4	1:0,4	1:0,2	1:0,2	
Technical Constraints [kWh/d]	1:1	14	12	12	8	8	6	6	5	5	
Cost Function [€/kWh]		2	3	3	3	3	4	4	3	3	

Fortnightly reference period

Key points for Shippers

- Transfer its own withdrawal capacity (bundled capacity)
- Shipper must define the quantities and the prices

- Offer withdrawal capacity
- Sell withdrawal capacity

Step 1 - Exchanges between unbundled capacities (belonging to the same fortnight)



Conversion Matrix		1:1	1:1	1:1,2	1:1,2	1:1,6	1:1,6	1:1,8	1:1,8	1:2	1:2	CAPACITY IN ADVANCE
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_1 			SH_2 		SH_3 	SH_4 		SH_5 		PURCHASES
Cost Function [€/kWh]			2	3	3	3	3	4	4	3	3	
Month	November - Month 1	December - Month 2		January - Month 3		February - Month 4		March - Month 5				
Fortnights	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15		
Conversion Matrix		1:1	1:1	1:0,8	1:0,8	1:0,6	1:0,6	1:0,4	1:0,4	1:0,2	1:0,2	POSTPONEMENTS
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_6 		SH_7 	SH_8 			SH_1 			SH_10 	SELLS
Cost Function [€/kWh]			2	3	3	3	3	4	4	3	3	

- Shippers with bundled capacity cannot participate
- Exchanges don't cause reductions to the tech constraints
- Exchanges are not subject to matrix conversion
- Localized marginal price (referred to the relative fortnight)
- In the matching phase prices take into account the referred cost function
- In the invoicing phase Shippers that buy capacity pay the marginal price value (included cost function)

Step 2 – Management of the capacity in advance (bundled/unbundled capacity)



Conversion Matrix		1:1	1:1	1:1,2	1:1,2	1:1,6	1:1,6	1:1,8	1:1,8	1:2	1:2	CAPACITY IN ADVANCE
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_1 ↓		SH_2 ↓		SH_3 ↓		SH_4 ↓		SH_5 ↓		PURCHASES
Cost Function [€/kWh]				3	3	3	3	4	4	3	3	
Month		November - Month 1		December - Month 2		January - Month 3		February - Month 4		March - Month 5		
Fortnights		I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	
Conversion Matrix		1:1	1:1	1:1	1:0,8	1:0,6	1:0,6	1:0,4	1:0,4	1:0,2	1:0,2	POSTPONEMENTS
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_6 ↑		SH_7 ↑		SH_8 ↑		SH_1 ↑		SH_10 ↑		SELLS
Cost Function [€/kWh]			2	3	3	3	3	4	4	3	3	

- Capacity sold is subject to tech constraints (economic merit order)
- Incomes will be recognized to the related Shipper only once the effective capacity reduction has been verified
- In the matching phase prices of the sales take into account the referred cost function

Step 3 – Management of the postponements of capacity (bundled/unbundled capacity)



Conversion Matrix		1:1	1:1	1:1,2	1:1,2	1:1,6	1:1,6	1:1,8	1:1,8	1:2	1:2	CAPACITY IN ADVANCE
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_1 ↓			SH_2 ↓		SH_3 ↓	SH_4 ↓		SH_5 ↓		PURCHASES
Cost Function [€/kWh]			2	3	3	3	4	4	3	3		
Month		November - Month 1		November - Month 2		January - Month 3		February - Month 4		March - Month 5		
Fortnights		I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	I-15	II-15	
Conversion Matrix		1:1	1:1	1:0,8	1:0,8	1:0,6	1:0,6	1:0,4	1:0,4	1:0,2	1:0,2	POSTPONEMENTS
Technical Constraints [kWh/d]			14	12	12	8	8	6	6	5	5	
		SH_6 ↑		SH_7 ↑	SH_8 ↑			SH_9 ↑			SH_10 ↑	SELLS
Cost Function [€/kWh]			2	3	3	3	3	4	4	3	3	

- Capacity sold is subject to tech constraints (economic merit order)
- Incomes will be recognized to the related Shipper only once the effective capacity reduction has been verified
- In the matching phase prices of the purchases take into account the referred cost function

Capacity in advance/postponements – Numerical Example



RECAP							PUBLISHED INFORMATION		
SHIPPER	QUANTITY [kwh/d]	PRICE [€]	Cap_ADVANCE/ POSTPONEMENT S	TYPE of REQUEST [PURCHASE/SELL]	BUNDLED CAPACITY	REFERENCE PERIOD [MONTH; FORTNIGHT]	COST FUNCTION [€]	MATRIX CONVERSION	TECHNICAL CONSTRAINTS [kwh/d]
1	4	9	Cap_Advance	Purchase	YES	November; 1°	0	1:1	
1	4	5	Cap_Advance	Sell	YES	January; 1°	3	1:1,6	8
2	8	12	Cap_Advance	Purchase	NO	November; 1°	0	1:1	
3	4	3	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
4	5	4	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
5	6	8	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
6	2	11	Postponements	Purchase	NO	March; 1°	3	1:0,2	5
7	4	2	Cap_Advance	Sell	NO	March; 1°	3	1:2	5
8	5	5	Postponements	Sell	YES	November; 1°	0	1:1	
8	5	8	Postponements	Purchase	YES	December; 2°	3	1:0,8	12
9	5	12	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
10	10	7	Postponements	Sell	NO	November; 1°	0	1:1	

Step 1 - Exchanges between unbundled capacities (belonging to the same fortnight)



RECAP							PUBLISHED INFORMATION		
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	Cap_ADVANCE/ POSTPONEMENTS	TYPE of REQUEST [PURCHASE/SELL]	BUNDLED CAPACITY	REFERENCE PERIOD [MONTH; FORTNIGHT]	COST FUNCTION [€]	MATRIX CONVERSION	TECHNICAL CONSTRAINTS [kWh/d]
1	4	9	Cap_Advance	Purchase	YES	November; 1°	0	1:1	
1	4	5	Cap_Advance	Sell	YES	January; 1°	3	1:1,6	8
2	8	12	Cap_Advance	Purchase	NO	November; 1°	0	1:1	
3	4	3	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
4	5	4	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
5	6	8	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
6	2	11	Postponements	Purchase	NO	March; 1°	3	1:0,2	5
7	4	2	Cap_Advance	Sell	NO	March; 1°	3	1:2	5
8	5	5	Postponements	Sell	YES	November; 1°	0	1:1	
8	5	8	Postponements	Purchase	YES	December; 2°	3	1:0,8	12
9	5	12	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
10	10	7	Postponements	Sell	NO	November; 1°	0	1:1	

Capacity in advance/postponements - Example



PURCHASES				SELLS			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE + COST FUNCTION [€]	SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE + COST FUNCTION [€]
9	5	12	15	3	4	3	6
5	6	8	11	4	5	4	7

6	2	11	14	7	4	2	5
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RECAP			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	INVOICE [€]
9	5	11	$5 \times 11 = 55$
5	4	11	$4 \times 11 = 44$
3	-4	$11 - 3 = 8$	$4 \times 8 = 32$
4	-5	$11 - 3 = 8$	$5 \times 8 = 40$

6	2	14	$2 \times 14 = 28$
7	-2	$14 - 3 = 11$	$2 \times 11 = 22$

Marginal Price

Cost Function

Capacity in advance/postponements - Example



RECAP							PUBLISHED INFORMATION		
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	Cap_ADVANCE/POSTPONEMENTS	TYPE of REQUEST [PURCHASE/SELL]	BUNDLED CAPACITY	REFERENCE PERIOD [MONTH; FORTNIGHT]	COST FUNCTION [€]	MATRIX CONVERSION	TECHNICAL CONSTRAINTS [kWh/d]
1	4	9	Cap_Advance	Purchase	YES	November; 1°	0	1:1	
1	4	5	Cap_Advance	Sell	YES	January; 1°	3	1:1,6	8
2	8	12	Cap_Advance	Purchase	NO	November; 1°	0	1:1	
3	4	3	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
4	5	4	Cap_Advance	Sell	NO	January; 2°	3	1:1,6	8
5	2	8	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
6	2	11	Postponements	Purchase	NO	March; 1°	3	1:0,2	5
7	2	2	Cap_Advance	Sell	NO	March; 1°	3	1:2	5
8	5	5	Postponements	Sell	YES	November; 1°	0	1:1	
8	5	8	Postponements	Purchase	YES	December; 2°	3	1:0,8	12
9	5	12	Postponements	Purchase	NO	January; 2°	3	1:0,6	8
10	10	7	Postponements	Sell	NO	November; 1°	0	1:1	

Step 2 – Management of the capacity in advance (bundled/unbundled capacity)



PURCHASES				SELLS			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE [€]	SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE + COST FUNCTION [€]
2	8	12	12	7	2	2	7
1	4	9	9	1	4	5	8

RECAP			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	INVOICE [€]
2	2	9	$2 \times 9 = 18$
1	4	9	$4 \times 9 = 36$
1	-6,4	$9 - 3 = 6$	$4 \times 6 = 24$
7	-4	$9 - 3 = 6$	$2 \times 6 = 12$

Marginal Price

Cost Function

Step 3 – Management of the postponements of capacity (bundled/unbundled capacity)



PURCHASES				SELLS			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE + COST FUNCTION [€]	SHIPPER	QUANTITY [kWh/d]	PRICE [€]	PRICE [€]
8	5	8	11	8	5	5	5
5	2	8	8	10	10	7	7

RECAP			
SHIPPER	QUANTITY [kWh/d]	PRICE [€]	INVOICE [€]
8	4	8	$5 \times 8 = 40$
5	1,2	8	$2 \times 8 = 16$
8	-5	$8 - 3 = 5$	$5 \times 5 = 25$
10	-2	$8 - 3 = 5$	$2 \times 5 = 10$

Marginal Price

Cost Function

Access Contracts Update

Focus on Storage



Thank you for your attention!

Contacts:

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