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GRTgaz Webinar

Storage compensation for sites connected to the transmission network

30 June - 7 July 2020

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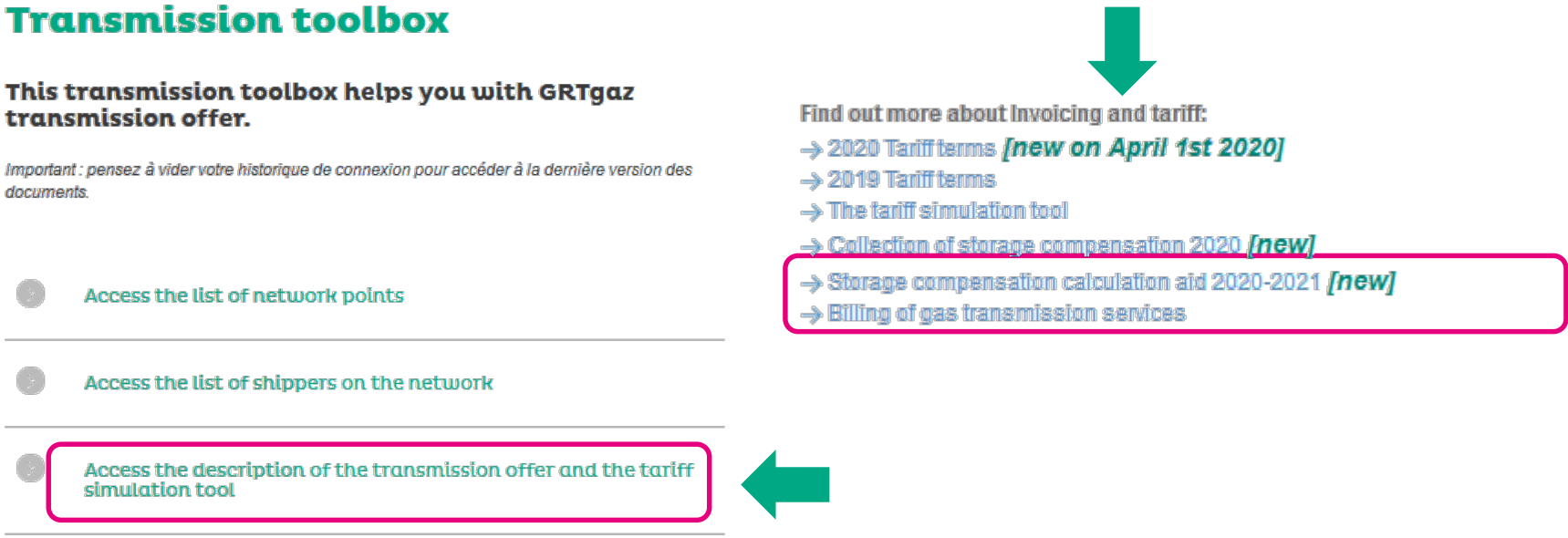
- Sequence 1 (30’): The fundamentals of storage compensation
  Aim: To assess my storage compensation in 2021
- Sequence 2 (15’): In-depth examination of the formula
  Aim: To understand the changes in my storage compensation base
- Sequence 3 (30’): Integration of interruptibility
  Aim: To have the tools to determine how much secondary interruptible capacity to subscribe in 2021 and subsequent years
- Sequence 4 (15’): Further steps
  Aim: To understand specific cases; to know how to find useful documentation

Documents published by GRTgaz

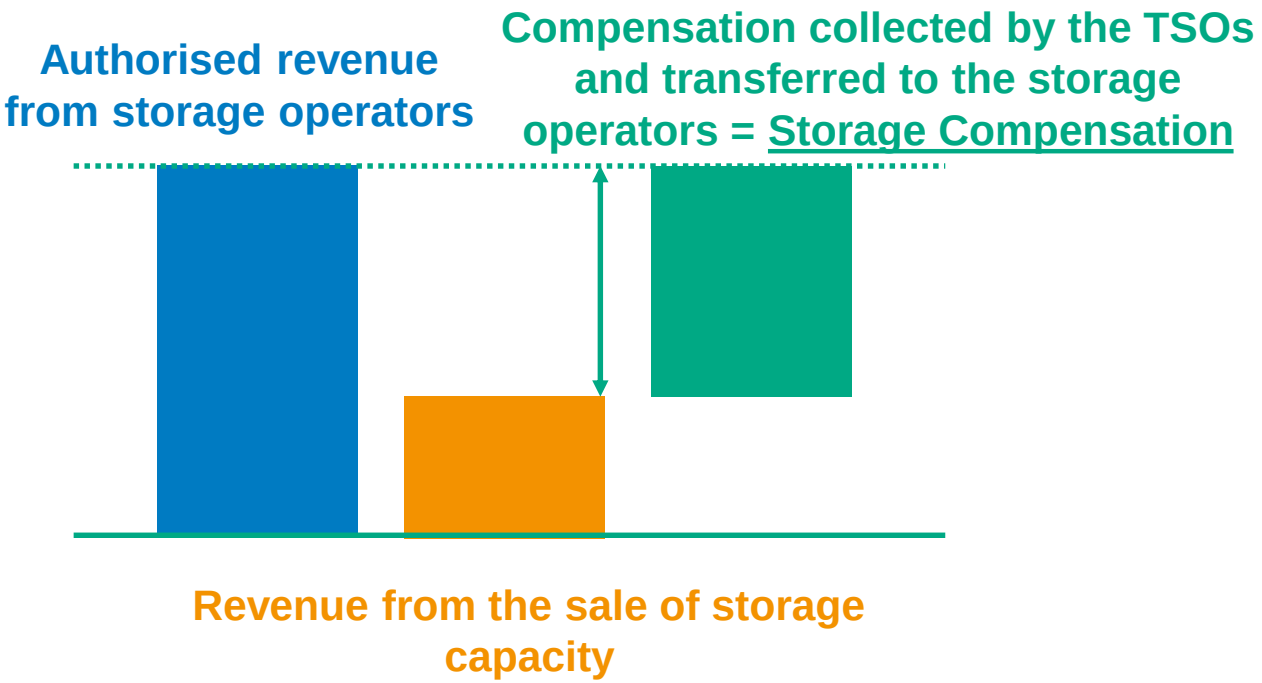
- Information sheet: “Find out more about collecting storage compensation”
- Storage compensation calculation simulator
- In the “Transmission Toolbox” section on our website: http://www.grtgaz.com/en/acces-direct/customer/supplier-trader/transmission-toolbox.html



Sequence 1
First application of the calculation formula

At the end of this sequence:
I will be able to calculate the amount that will be invoiced for 2021

The principle of storage compensation



Formula

- The amount invoiced to the shipper from April 2021 (invoice sent in May for the month of April) will be calculated as follows:

  Invoiced amount = Unit Term x Storage Compensation Base

- **Unit Term**: in €/MWh/d, will be published by the CRE, probably in March 2021

- **Storage Compensation Base**: in MWh/d, the sum of all Modulations of the sites that are supplied on April 1st by the shipper

- The amount is invoiced on a monthly basis: 1/12 of the above amount every month.

Unit Term

- It depends on the regulated revenue of the storage operators for 2021 (decided by the CRE) and the results of their capacity auctions that will take place between the end of 2020 and February 2021.

- Published by the CRE after the auctions are closed, usually in March

- **Valid between April 1st 2021 and March 31st 2022**

- History of the Unit Term since 2018:

  - April 2018 – March 2019: €297.1 /MWh/j
  - April 2019 – March 2020 : €213.46/MWh/j
  - April 2020 – March 2021: €78.63/MWh/j
  - *It is unlikely that the charge for the period 2021-2022 will get any lower. It could even rise again…*

Storage Compensation Base

- The **Storage Compensation Base** is the sum of the Modulations of all the consumer sites supplied by the shipper.
- A **Modulation** is calculated at the level of each consumer site.
- The Modulation is **set from April 1st to the following March 31st**.
- The Storage Compensation Base per shipper **is recalculated each month**, based on the shipper's portfolio on the first day of the month.

Modulation

- For each site, an **Intermediate Modulation** is calculated for each of the 3 years prior to invoicing (November to October):

$$Intermediate\ Modulation = \max\left(0; \frac{winter\ consumption}{151} - \frac{annual\ consumption}{365\ *} - Int\right)$$

*Even in a leap year

Term covered in the third sequence

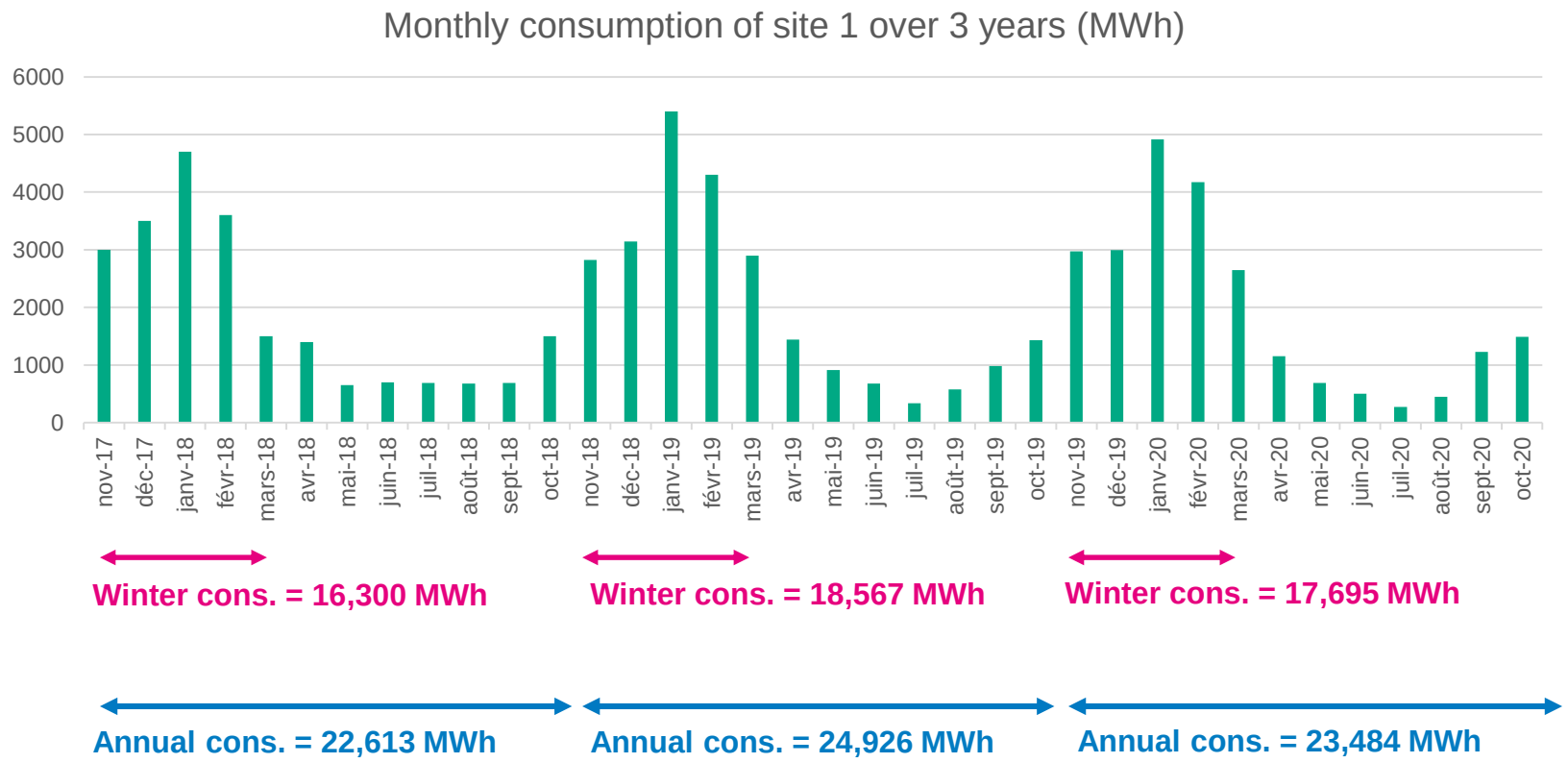
- Then:

$$Modulation = \text{average}\ (two\ lowest\ Intermediate\ Modulations\ among\ the\ 3)$$

- Winter consumption: between November and March
- Annual consumption: between November and October

Site example 1 1/3

Our first example is a site with the following consumption profile over the 3 years prior to April 2021:



Site example 1 2/3

Intermediate modulations calculation:

	2017-2018	2018-2019	2019-2020
Winter average	16,300/151 = 108	18,567/151 = 123	17,695/151 = 117
Annual average	22,613/365 = 62	24,926/365 = 68	23,484/365 = 64
Intermediate modulation	46	55	53

Lowest value

2nd lowest value

Storage Compensation Base = average (46 ; 53) = 49 MWh/d

Site example 1 3/3

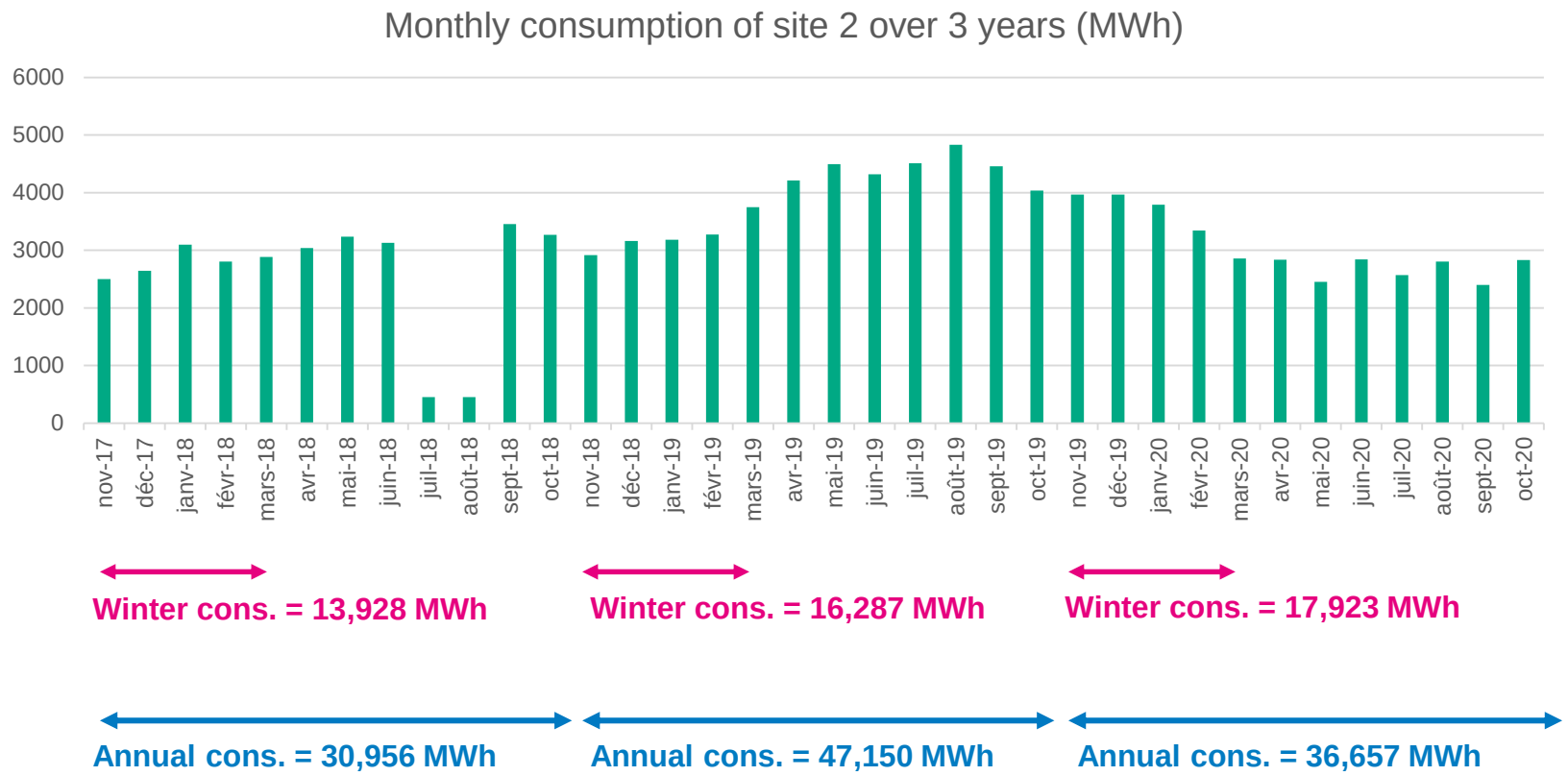
Examples of amounts ultimately invoiced, based on historical charges (the integration of transmission customers into the storage compensation base next year should not fundamentally change the balances)

	Storage Compensation Base	Unit charge	Invoiced amount*
As of April 1st 2018	49 MWh/d	297.1	49 x 297.1 = €14,557.9 per year
As of April 1st 2019		213.46	49 x 213.46 = € 10,459.54 per year
As of April 1st 2020		78.63	49 x 78.63 = € 3,857.8 per year
As of April 1st 2021		?	?

* Invoiced on a monthly basis, 1/12 of the amount calculated every month

Site example 2 1/3

Our second example is a site with the following consumption profile over the 3 years prior to April 2021:



Site example 2 2/3

Intermediate modulations calculation:

	2017-2018	2018-2019	2019-2020
Winter average	13,928/151 = 92	16,287/151 = 108	17,923/151 = 119
Annual average	30,956/365 = 85	47,150/365 = 129	36,657/365 = 100
Intermediate modulation	7	0	19

2nd lowest value **Lowest value**

Storage Compensation Base = average (0 ; 7) = 4 MWh/d

Site example 2 3/3

Examples of amounts ultimately invoiced, based on historical charges:

	Storage Compensation Base	Unit charge	Invoiced amount*
As of April 1st 2018	4 MWh/d	297.1	4 x 297.1 = € 1,188.4 per year
As of April 1st 2019		213.46	4 x 213.46 = € 853.84 per year
As of April 1st 2020		78.63	4 x 78.63 = € 314.52 per year
As of April 1st 2021		?	?

* Invoiced on a monthly basis, 1/12 of the amount calculated every month

Example: use of the calculator provided by GRTgaz

http://www.grtgaz.com/fileadmin/clients/fournisseurs/documents/en/Storage-compensation-calculation-aid-2020-2021.xlsx

Any questions?

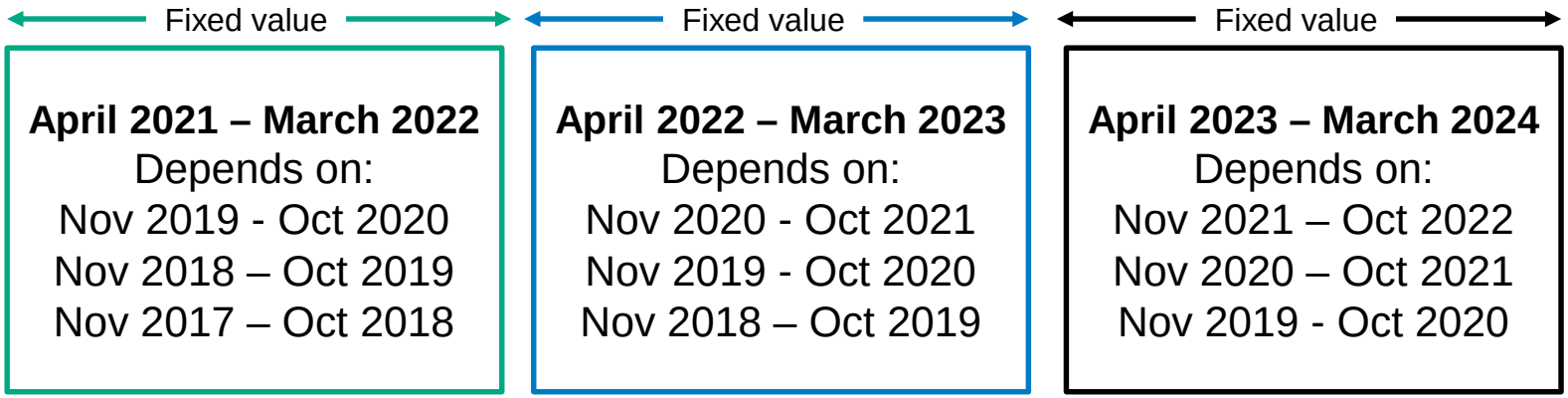
Sequence 2
In-depth examination of the formula

At the end of this sequence:
I will understand the reasons for changes in modulation for each site

No intra-year change

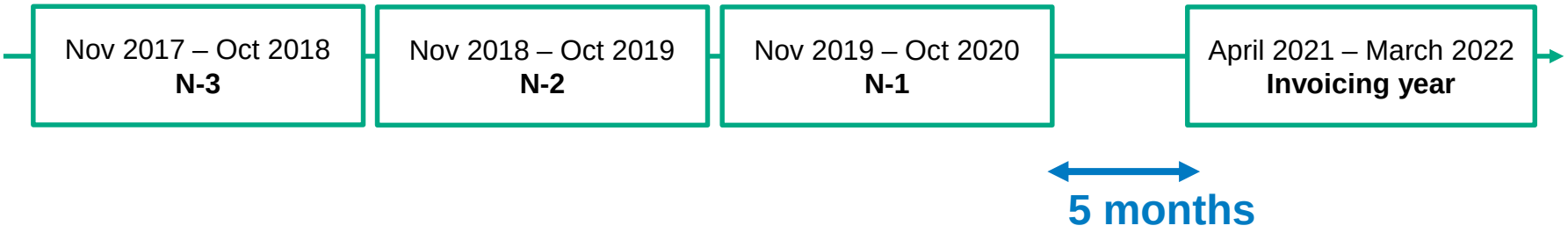
Once the Modulation has been determined for a given site, **it is fixed for the entire period April N – March N+1**.

No recalculation is performed when there is a change of supplier, as the site's historical data has not changed.



Reference period

The reference period, November to October, **leaves 5 months** between the calculation of the modulation and the start of invoicing:

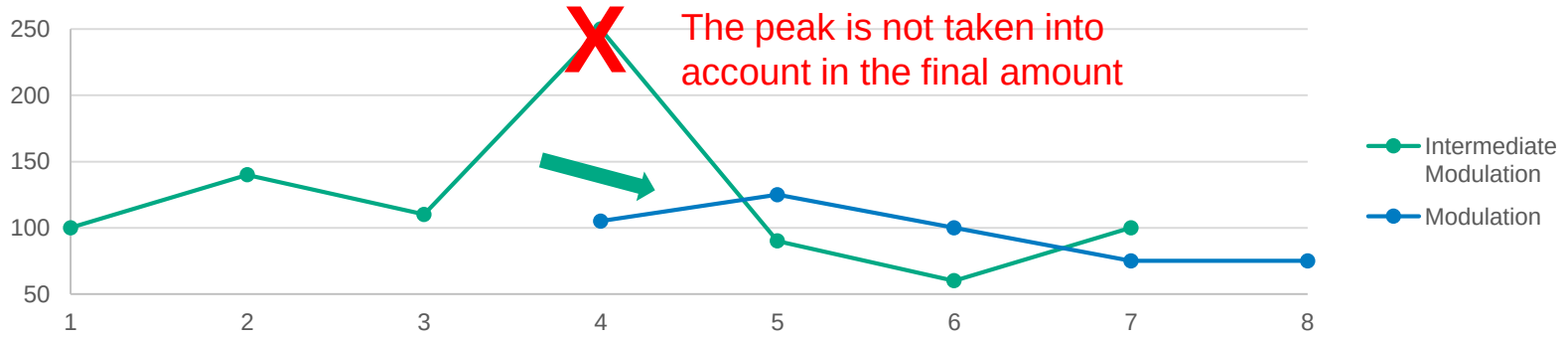


This gives time to anticipate the amounts that will be invoiced, once the allocations for the previous year have been validated by GRTgaz.

Average and selection of lowest annual values

The 3-year average smooths out the Modulation and reduces variations from one year to another.
Selecting the two lowest Intermediate Modulations cancels out the impact of a year during which the modulation would have increased suddenly and exceptionally, e.g. due to large-scale maintenance work during the summer.

Year	1	2	3	4	5	6	7	8
Intermediate Modulation	100	140	110	**250**	90	60	100	
Modulation				105	125	100	75	75



Is everything clear?

Sequence 3
Integration of interruptibility

At the end of this sequence:
I will have all the tools I need to decide which interruptible to subscribe for my consumer site

Preamble

As a reminder, taking out a secondary interruptible contract with GRTgaz is a binding legal and financial commitment.

You will be offered a dedicated presentation on the exact procedures for subscribing to and respond to activation of interruptibility products.

Interruptibility in the calculation formula

$$Intermediate\ Modulation = \max\left(0; \frac{winter\ consumption}{151} - \frac{annual\ consumption}{365} - Int\right)$$

The term Int includes:

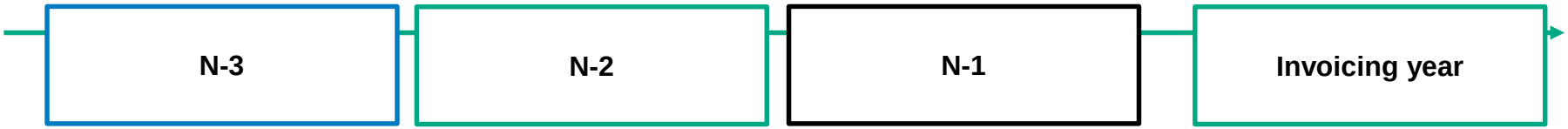
- **The secondary and/or guaranteed interruptible** subscribed by the consumer site in force during the winter in question (November to March), i.e. that was subscribed on April 1st of the previous year

- **The "transmission" interruptible** subscribed by the shipper for the consumer site in force during the winter in question (November to March)

For sites connected to the transmission network, this is the only way to be fully or partially exempt from storage compensation payments

Reference period

The interruptible subscribed in year n must be applied for the same year n, before selecting the two lowest modulations and applying the average



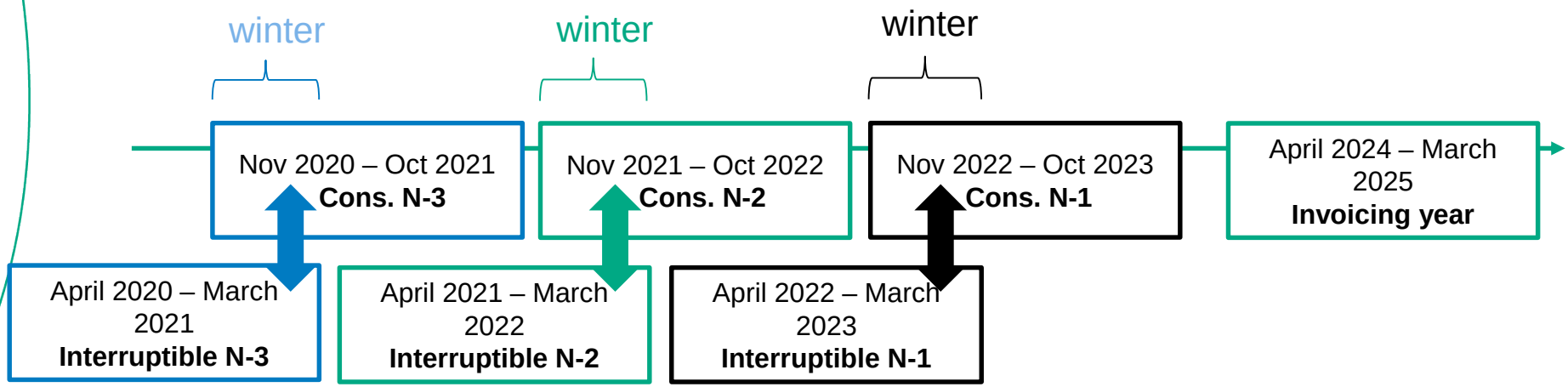
Modulation(N-3) = winter consumption(N-3)/151 – annual consumption(N-3)/365 – **Interruptible(N-3)**

Modulation(N-1) = winter consumption(N-1)/151 – annual consumption(N-1)/365 – **Interruptible(N-1)**

Modulation(N-2) = winter consumption(N-2)/151 – annual consumption(N-2)/365 – **Interruptible(N-2)**

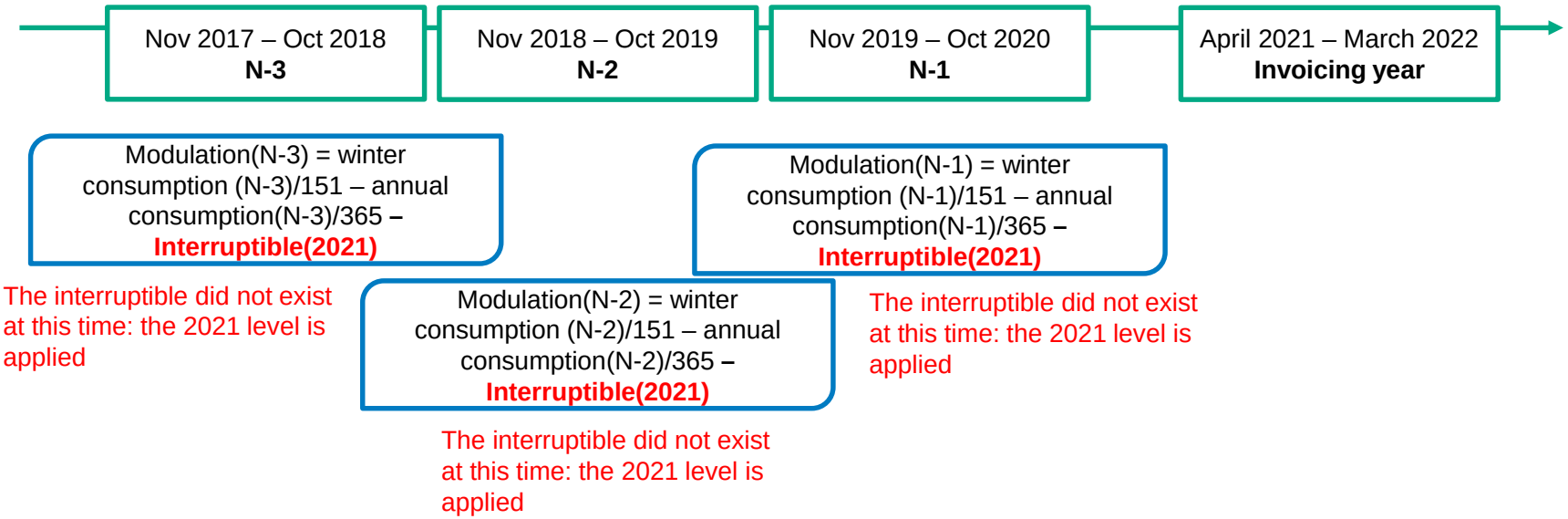
Reference period

The consumption considered is between **November and October**.
The interruptible is subscribed for the period from **April to April**.
Consumption is compared with the level of interruptibility subscribed **during the winter (November to March)**.



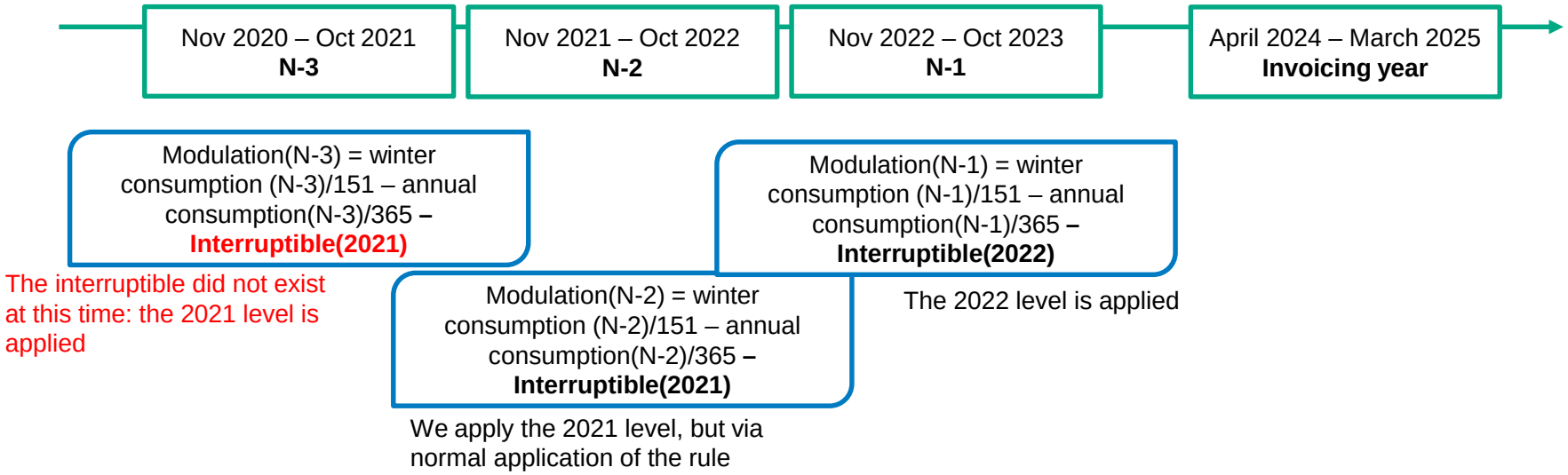
Transitional measure for years before 2021

Given that the first interruptibility contracts will be signed for April 1st 2021 only, the interruptible value subscribed from April 1st 2021 to March 31st 2022 will be used on an exceptional basis for all consumption years prior to this date.



Transitional measure for years before 2021

Until 2025, we will continue to take the value subscribed on April 1st 2021 for the years prior to this date.

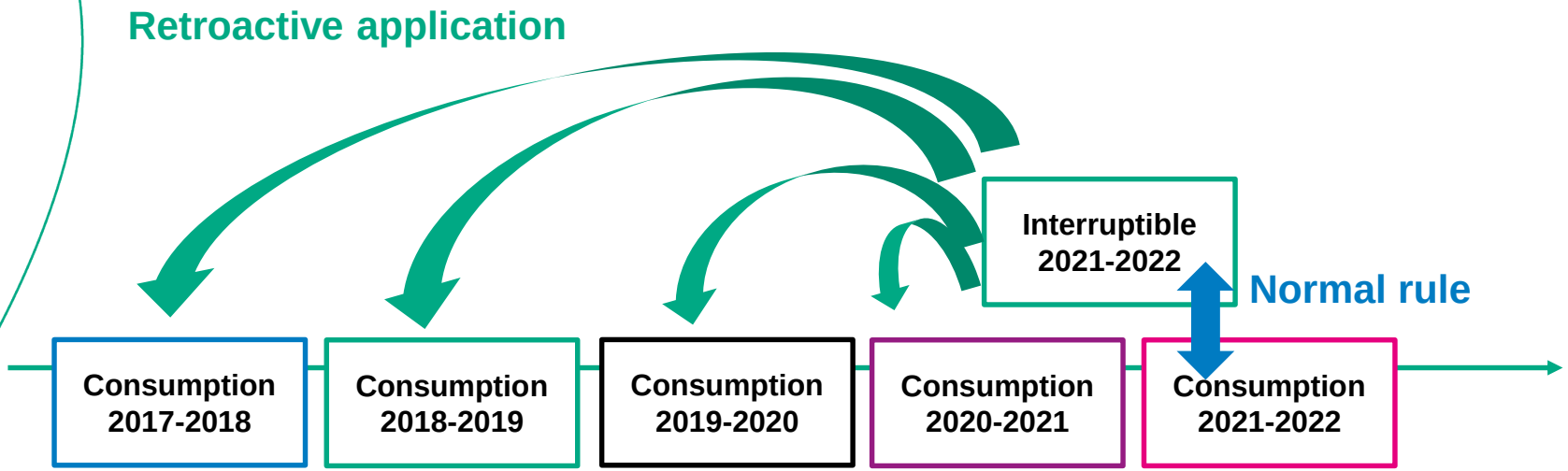


Consequence for 2021

It is already possible to know each site's ceiling modulation for 2021 based on known data from 2017-2018 and 2018-2019. If the 2019-2020 modulation is greater than these, it will not be taken into account for 2021.

Exceptionally, **it will be possible to determine exactly how much secondary/guaranteed interruptible to subscribe on April 1st 2021** to be fully exempt in the first year, as this value will apply to the previous 3 years.
However, it must be taken into account that this value **will also apply to 2021-2022.**

Consequence for 2021

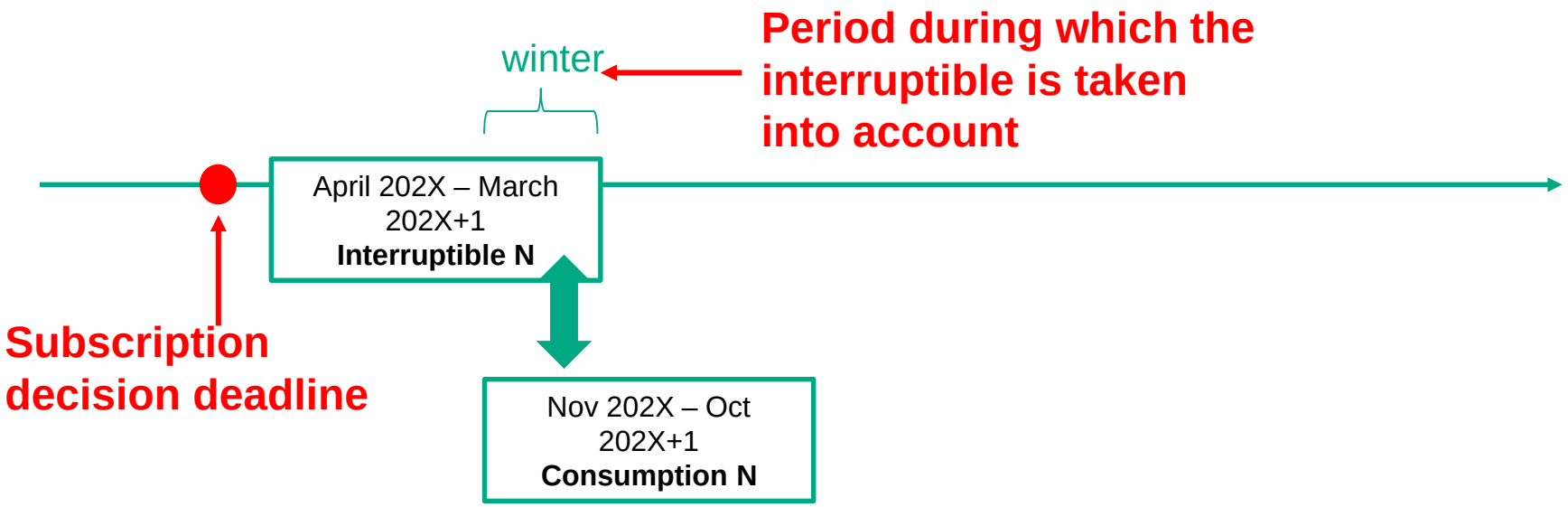


The interruptible subscribed for the period April 2021 – March 2022 will apply to 5 intermediate modulations:

- Retroactively, those included in 2017-2018 and 2020-2021
- Normally, to that of 2021-2022

After 2021

The interruptible level that can be chosen each year must be determined in relation to a **provisional** intermediate modulation. It is subscribed on April 1st of one year but taken into account during the following winter.



After 2021

In principle, it is not necessary to subscribe to a secondary and/or guaranteed interruptible level equal to the capacity subscribed by the shipper to be fully exempt from storage compensation: **it is sufficient to meet the intermediate modulation level for the year in question**.

It is not even mandatory to subscribe to this much: **you can subscribe to any interruptible level that you wish (or to which you can expose yourself).**

Example:

A consumer site estimates that its modulation will be around 50 MWh/d. The capacity subscribed by the shipper is 200 MWh/d.

- ➔ To bring its final modulation to 0, it simply has to subscribe to 50 MWh/d of secondary interruptible.
- ➔ If the site cannot interrupt its consumption up to 50 MWh/d but only 40 MWh/d (the minimum subscription value), it can, if it so wishes, subscribe 40 MWh/d and reduce its modulation to 10 MWh/d.

Scenario 1/6 – site 1

Q1 2021

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Intermediate modulation	46	55	57	**?**	**?**
Interruptible	= 2021-2022 value	= 2021-2022 value	= 2021-2022 value	= 2021-2022 value	**60**

From the point of view of storage compensation in 2021, Site 1 does not need to subscribe more than 55 MWh/d of secondary interruptible in order to be fully exempt.

However, given that the interruptible subscribed on April 1st 2021 will also impact the intermediate modulation for 2020-2021 and 2021-2022, it should also take these into account in its analysis.

The site estimates that its modulation will not exceed 60 MWh/d. It estimates that it can be interrupted at this level according to the secondary interruptibility conditions. **It subscribes 60 MWh/d of secondary interruptible for April 2021-March 2022**.

Scenario 2/6 – site 1

Invoicing
April 2021 – March 2022

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Intermediate modulation (Nov – Oct)	46	55	**57**	?	?
Interruptible (Apr – Mar)	*=60*	*=60*	*=60*	*=60*	60
Final intermediate modulation	0	0	0	?	?
Site modulation	N/A	N/A	N/A	N/A	**0**

Once the consumption data up to October 2020 is known, the site modulation calculated by the TSO is zero, as for each of the previous 3 years the result came to 0. The shipper will not be invoiced for storage compensation for this site.

Scenario 3/6 – site 1

Q1 2022

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Intermediate modulation (Nov – Oct)	55	57	**52**	?	?
Interruptible (Apr – Mar)	*=60*	*=60*	*=60*	60	**60**
Final intermediate modulation	0	0	?	?	?
Site modulation	N/A	N/A	N/A	0	?

Consumption data for 2020-2021 is known, and the site believes its assumptions from the previous year remain valid.

It once again subscribes 60 Mwh/d of interruptible for the period April 2022-March 2023.

Scenario 4/6 – site 1

Invoicing
April 2022 – March 2023

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Intermediate modulation (Nov – Oct)	55	57	52	?	?
Interruptible (Apr – Mar)	*=60*	*=60*	*=60*	60	60
Final intermediate modulation	0	0	0	?	?
Site modulation	N/A	N/A	N/A	0	**0**

Once again, the shipper is not invoiced for storage compensation for the period April 2022 – March 2023.

Run-through 5/6 – site 1

Q1 2023

	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Intermediate modulation (Nov – Oct)	57	52	**64**	?	?
Interruptible (Apr – Mar)	*=60*	*=60*	60	60	**65**
Final intermediate modulation	0	0	**4**	?	?
Site modulation	N/A	N/A	0	0	?

The 2021-2023 consumption data is known, and the modulation is higher than expected.

The site reviews its assumptions and now considers that it is better to subscribe 65 MWh/d of secondary interruptible.

Run-through 6/6 – site 1

Invoicing
April 2023 – March 2024

	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Intermediate modulation (Nov – Oct)	57	52	64	?	?
Interruptible (Apr – Mar)	*/60*	*/60*	60	60	65
Final intermediate modulation	0	0	4	?	?
Site modulation	N/A	N/A	0	0	**0**

The intermediate modulation for 2021-2022 is not zero. With the other two values being zero, however, the site modulation will ultimately be 0.
The shipper is still not charged for storage compensation for this site in 2023-2024.

Feel free to respond!

Sequence 4
Further steps

At the end of this sequence:
I will have a firm grasp of the subject and I will know where to find all the reference documentation

GRTgaz, invoicing agent between the shipper and the storage operators

Storage regulation gave an **intermediary** role to GRTgaz and Teréga Transport for the invoicing of storage compensation on their behalf.

Thus, each shipper receives three invoices from GRTgaz, and in the name of each of the three storage operators (Storengy, Teréga Stockage and Géométhane). These correspond to the distribution of the calculated amount between these three.

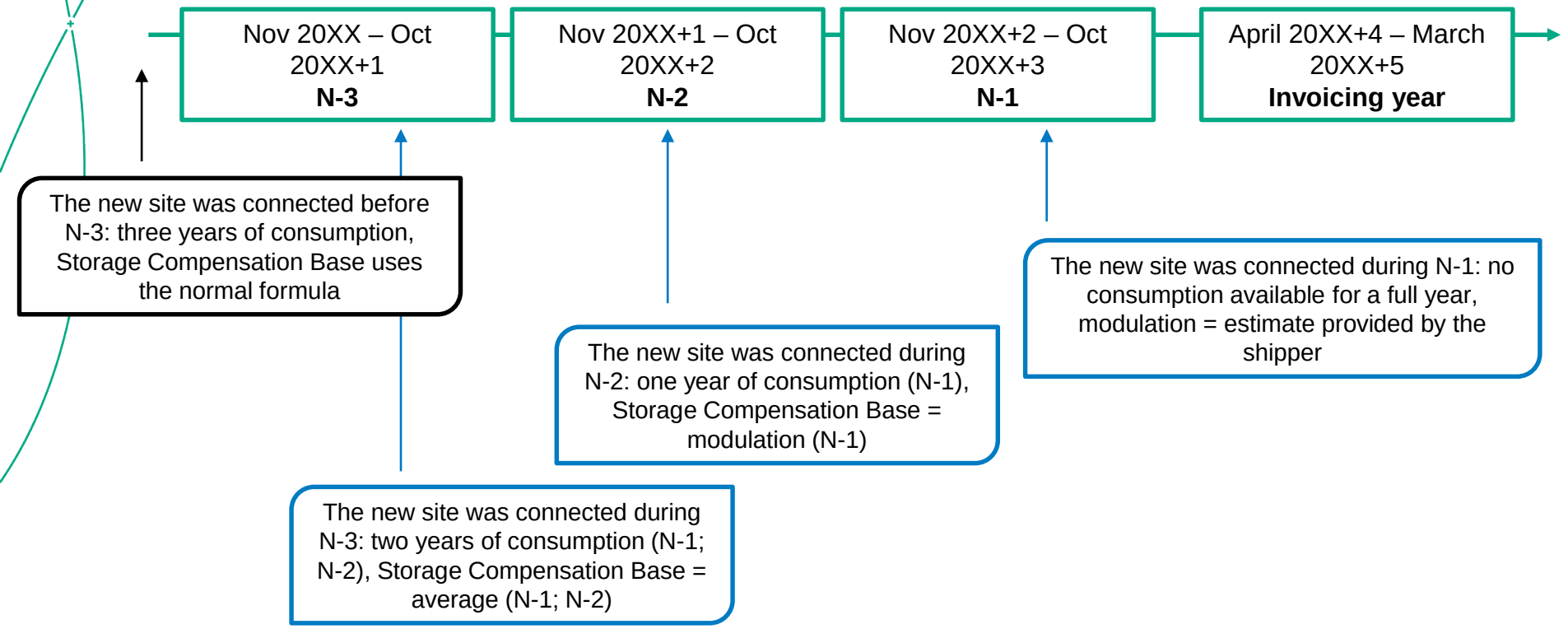
For greater convenience, GRTgaz has attached a summary document to these three invoices reiterating the total amount to be paid.

During the period April 2020 – December 2021, Teréga Stockage has an overpayment to return to the market. The shippers will thus receive two invoices and a credit note.

Some specific cases

New connected site

A new "subscription" site is connected: no measurements are therefore available for this site before the connection date.
(A site that is already connected but has stopped consumption for a period of time is not in this situation: measurements are available, which are equal to zero).



Some specific cases

Transmission interruptible

We have seen that the term “Int” could include the transmission interruptible subscribed by the shipper when the firm capacity is no longer available on the local downstream network.

As well as the secondary interruptible for a given intermediate modulation calculation, the subscribed value **for the winter period (November to March)** will be taken into account.

If the value of the transmission interruptible varies during the winter, GRTgaz will take:

Int = average (interruptible subscription during the winter)

Some specific cases

Interruptible for several contractual points (LI)

Under certain conditions*, it is possible for several contractual points (LI) to subscribe to a single interruptibility contract. The different sites are responsible for distributing the reduction in consumption in response to activation by the TSO, if necessary.

For these sites, the distribution of the interruptible level between the LI will be requested to calculate the storage compensation. This will only be used for invoicing. It will have no impact on operation in the event of the interruptible being activated, as described in the previous paragraph.

* the consumption sites are connected to the network of the same network operator, have metering devices located in the territory of the same municipality or immediately neighbouring municipalities, and depend on delivery points whose shipper having a single balancing shipper

Secondary interruptibility, storage compensation: who decides what?

COMMISSION DE RÉGULATION DE L'ÉNERGIE

Interruptibility mechanisms
➔ Security of supply

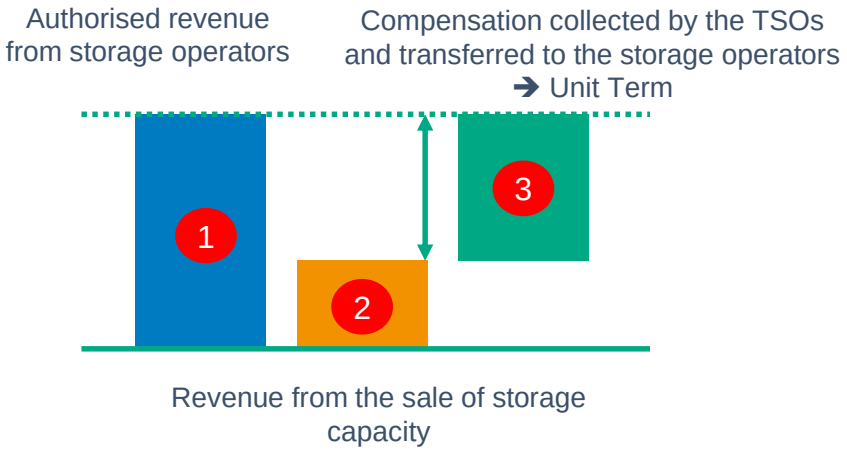
Interruptible capacities shall give rise to an exemption from storage compensation.

Storage compensation
➔ Storage regulation

The DGEC has set out the exact conditions for the application of **secondary and guaranteed interruptibility**.

The CRE has set out the exact conditions for the application of **storage compensation** (and has decided to link the two subjects by taking interruptibility into account in the calculation formula)

Determination of the storage compensation Unit Term



1. Set by the CRE and published each year

2. Derived from auction results and published (in aggregate) by the storage operators. (also referred to in 3)

3. Derived from 1 and 2, and from a provisional total Storage Compensation Base provided to the CSE by the TSOs during Q1.

Reference documents as of April 1st 2020

ATRT7 decision setting out the storage compensation application procedure:

ATRT7

DGEC order on secondary and guaranteed interruptibility

DGEC interruptibility order

CRE ruling setting the authorised revenue of Storengy, Teréga Stockage and Géométhane:

ATS2

CRE ruling setting the storage compensation Unit Term for the period April 1st 2020 – March 31st 2021

Ruling for 2020-2055

Any questions?