

The Rte logo is a light blue circle containing the letters 'Rte' in white. The background of the entire page is a dark blue with a network of light blue lines and dots.

Rte

# TURPE 5

NETWORK TARIFF

**UNDERSTANDING THE TARIFF**



**Consumers &  
Generators**

JULY 2019 EDITION





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# Discover TURPE 5



## Editorial by Khalid ABDALLAOUI, Business Director for RTE

**Our mission: To provide our customers with a safe, economical and clean access to our power supply.**

Over the next few years, we intend to strengthen and develop our activities to support your performance and to offer you quality services that meet your expectations.

TURPE is our primary financial resource and the main contractual relationship we have with you. It represents nearly 90% of RTE's revenues and covers our investments and all the management and maintenance activities of the public power transmission network.

All the trades that are mobilized to meet your needs induce a certain number of expenses that should be covered by a tariff.

The main control modes implemented by CRE ensure that TURPE guarantees a good coverage of our expenses while allowing us to be a responsible and efficient actor.

This rate gives us the means to be at the service of your performance and to be able to offer new services adapted to your needs at any time.

**The "TURPE 5" transmission system access tariff came into force two years ago, and the price indexing system has led to a 2.16% increase in the tariff**

RTE enjoys a regulated monopoly position for managing the Public Transmission System. The revenue generated by managing electricity transmission is therefore decided by the French Energy Regulatory Commission and then passed on to user customers via the tariff.

This tariff provides for a provisional authorised revenue trajectory between 2017 and 2021. This trajectory is corrected ex-post at the end of each financial year.

The difference between tariff revenue effectively collected by RTE and the authorised ex-post revenue implies an annual variation in the tariff on August 1st of every year.

So, if the tariff revenue is lower than the authorised revenue, the tariff is increased. Otherwise, it is reduced. If the increase is not enough to compensate for the difference, the remainder is renewed the following year.

These are the circumstances of the 2.16% tariff variation of August 1<sup>st</sup> 2019.

Three main factors explain this increase:

- The TURPE 4 period ended in August 2017 with a shortfall that RTE recovered during the TURPE 5 period (symmetrically, RTE had paid back the TURPE 3 overpayments during the TURPE 4 period).
- Inflation rate, calculated based on french official statistical standards
- A decrease in the electricity consumption level, combined with specific consumers financial mechanisms.

2018 was also the year of the generalization of wireless meters, enabling our clients to have on the fly access to their grid data. This information is now available for consultation or downloading through 2 customer portals designed by RTE.

**The whole Business Department staff and I will be pleased to assist you and your services, should you have any requests.**

## The main principles

The TURPE is designed to charge you according to the costs generated by your use of the network.

### The tariff is based on four main principles

#### 1. The postage stamp principle:

Pricing is independent of the distance traveled by the power between the producer and the end user to supply a site.

#### 2. The tariff equalization principle:

To be fair across all territories, TURPE is applied in the same way throughout the continental metropolitan national territory.

#### 3. Principle of the tariff's dual component (called a binomial tariff):

Excluding HV-B 3 and excluding injection, the tariff includes a part for power and a part for energy divided into several categories to account for our customers' different kinds of uses and for the variation of network costs according to the time and the day of the year for the same extraction volume.

#### 4. Principle of hourly/seasonal adjustments:

The cost of the energy part varies according to the seasons, days and hours of use of the Public Transmission System.

### Indexing of the tariff schedule

The tariff schedule is updated every year on August 1st, according to two parameters:

- The non-tobacco consumer price index,
- The a posteriori correction of the differences in revenue and expenditure with respect to authorized income between -2% and +2%.

### Incentive regulation encourages us to continually improve our performance

In addition to the tariff, the CRE also sets out a regulatory framework to encourage RTE to improve its performance by setting up incentive mechanisms. These financial mechanisms result in bonuses or penalties, depending on whether the objectives are met.



#### Authorized income:

As for its use of the Public Transmission System for Electricity, RTE is in a regulated monopoly situation. Thus, your bills do not come from a market price but from a tariff set by the regulator: the French Energy Regulatory Commission (CRE).

This tariff covers RTE's costs, which represents the authorized income. In order to guarantee this coverage, the tariff would be increased if this income was not met. It would otherwise be revised downwards in order to refund overages to all RTE customers.

In order to limit cash flow fluctuations, the tariff will be reviewed annually on August 1st within a range of -2% + CPI to +2% + CPI for the duration of TURPE 5.

*CPI: Non-tobacco consumer price index*



# The main differences compared with previous tariffs

## HV-B 3 extraction is only invoiced for the energy transferred

In load extraction, customers connected to HV-B 3 are only charged for the energy part, linked to their extraction volume, at a flat price of €3.3/MWh (i.e. a non-binomial tariff that is not adjusted for time/season).

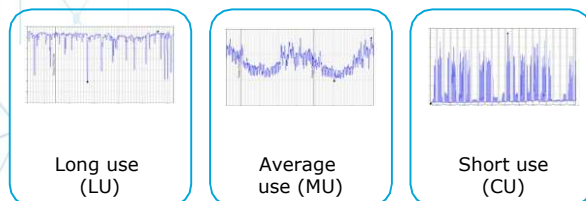
## Time range schedule changes

The names of the time ranges for the HV-B 2, HV-B 1 and MV rates are changing: there are always 5 time ranges, but winter (November to March) and summer (April to October) are replaced by high season and the low season.

## 3 tariff versions corresponding to 3 consumption profiles

For HV-B 2 and HV-B 1 tariffs, three "Tariff Versions

" called short use (CU), average use (MU) and long use (LU) are substituted for the three "Tariff Options" previously used in TURPE 4.



For the MV 1 tariff, new fixed and mobile tariffs are applied in two tariff versions called Short Use (CU) and Long Use (LU).

## Scheduled power exceedances are extended to the calendar year

You can also benefit from one-time exceedances scheduled at any time of the year, only in case of work on your electrical installations and subject to refusal or suspension by RTE, motivated by constraints

Operating on the public transmission system.

## The adjustment of MV rates for time/season is strengthened

For the MV voltage range, the concave option (not adjusted for time/season, single subscribed power) and the 8-time tariff disappear, replaced by a uniform division of tariff schedules into five time ranges. A mobile tariff is introduced, the peak period of which corresponds to the peak period known as "PP1" in the capacity mechanism.



### The PP1 peak period

The PP1 period is the reference period when establishing the obligation of each actor required in the capacity mechanism. It consists of 10 hours per day on the time frames [7am; 3pm] and [6pm; 8pm] for the days reported by RTE. Reported days are not fixed before winter. However, they still include the working days from November to March minus the period corresponding to the Christmas school holidays. The reporting for PP1 days is transmitted on D-1 at 9:30am. It is based on a consumption criterion. The number of PP1 days reported varies between 10 and 15 per year of delivery.

### The rules for modifying the subscribed powers are changing

You can now change your subscribed power in the middle of the month (instead of the 1<sup>st</sup> at the moment), but without retroactive effect, with a notice of at least 3 working days.

### Carry-over is financially neutralized

In the case of load transfers requested by RTE for works between two main or complementary power supplies of the same consumption site, exceedances incurred by customers are capped during the load transfer period.

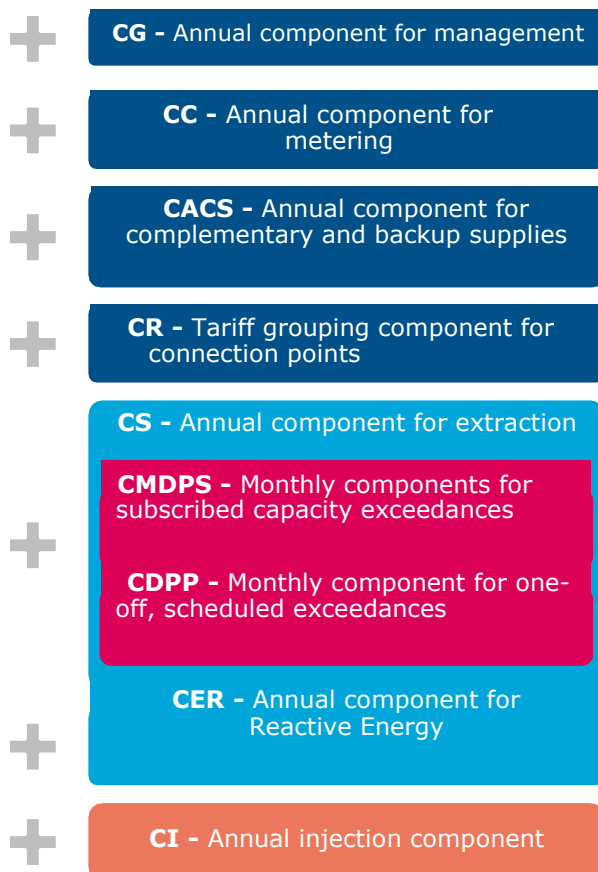
This system does not apply to MV connection points.

# Tariff elements, formulas and rates

## Tariff presentation

At each connection point or grouping point, the annual price for accessing the Public Transmission System of Electricity is the sum of:

For all customers



**Amount of the annual bill for accessing the Public Transmission System of Electricity\***

\* Excluding taxes and contributions

The energy used to calculate the different components (excluding CG, CC, and fixed CACS costs) corresponds to the physical flow measured at the point of connection concerned.



## Description of tariff components

The tariff's annual components for accessing the Public Transmission System of Electricity by connection point or by grouping point are described below.

The formulas and coefficients presented below are derived from:

- The November 17th, 2016 French Energy Regulatory Commission's (CRE) decision on charges for the use of public networks of power starting August 1st, 2017 for HV-B voltage, published in the Official Bulletin of January 28th, 2017;

- The November 17th, 2016 French Energy Regulatory Commission's (CRE) decision on charges for the use of public power networks starting August 1st, 2017 for MV and LV voltage, published in the Official Bulletin of January 28th, 2017.
- The French Energy Regulatory Commission's decision of June 6th 2019 regarding the August 1<sup>st</sup> 2019 tariff schedule increase for using the HV-B voltage range of the public electricity network and the amount of compensation to be paid to Strasbourg Electricité Réseaux in application of article D. 341-11-1 of the energy code.

### The annual component for management (CG)

The annual component for management covers the costs of managing Customer records, such as receiving, contracting, invoicing and collection. This component is established for each main power connection point. Its amount depends on the voltage range (HV-B or MV).

Voltage range	at€/year
HV-B	8,952.60
MV	417.6

### The annual injection component (CI)

If you inject power on the public transmission network, you may be billed for the annual injection component. It is established for each connection point, depending on the active energy injected and the voltage range.

Voltage range	c€/MWh
HV-B 3	20
HV-B 2	20
HV-B 1	0
MV	0

### The annual component for metering (CC)

The annual component for metering covers the costs of metering, control, reading and transmission of Customer Metering Data, as well as leasing and maintenance costs, if applicable. It is based on the metering device's ownership status.

#### Metering device owned by RTE

Voltage range	Annual component €/year/device
HV-B	3,095.40
MV	549.60

#### Metering device owned by the customer

Voltage range	Annual component €/year/device
HV-B	555.72
MV	166.20

## The annual component for extractions (CS) and the monthly components for subscribed capacity exceedances (CMDPS)

*The tariff for HV-B 3 extraction not adjusted for time/season*

For the HV-B 3 voltage range, the extraction component is calculated as a function of the energy withdrawn at a flat price and for each connection point. The notion of subscribed power exceedances is no longer applicable for this voltage range.

At each of these connection points, the annual extraction component shall be established according to the following formula:

$$CS = c \times E$$

*HV-B 2, HV-B 1 and MV tariffs adjusted for time/season*

### The subdivision of subscribed capacities

For each one of your connection points, you choose a subscribed capacity for each time range and a pricing version. These subscriptions are set for 12 months. The five subscribed capacities must be

subdivided in the following order:

#### Tariff versions

For the HV-B 1 and HV-B 2 ranges, three tariff versions are available depending on your network usage profile: short use, average use or long use.

#### The calculation formula

At each of these connection points, the annual extraction component shall be established as follows:

$$b_1 \times PS_1 + \sum_{i=2}^5 b_i \times (PS_i - PS_{i-1})$$

Fixed part = Power part

$$+ \sum_{i=1}^5 c_i \times E_i$$

Energy part

$$+ \sum_{12 \text{ mois}} \sum_{i=1}^5 0,04 \times b_i \times \sqrt{\sum_j (P_j - PS_i)^2}$$

Exceedances

Where:

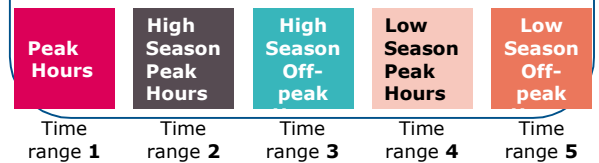
- $i$  denotes the time interval;
- $b_i$  is the weighting factor of the capacity defined by time interval  $i$  according to the voltage range and the tariff version concerned;
- $PS_i$  is the subscribed power of time interval  $i$ ;
- $c_i$  is the weighting factor of the energy for time interval  $i$  according to the voltage range and by the tariff version concerned;

The applicable  $c$  factor is:

Voltage range	$c$ €/kWh
HV-B 3	0.33



*Time range schedule*



$$PS_1 \leq PS_2 \leq PS_3 \leq PS_4 \leq PS_5$$

For the MV 1 range, you have two options (fixed or mobile). For each option, two tariff versions are available depending on your network usage profile: short use or long use.

The connection points connected to the MV 2 voltage range are priced as those on HV-B 1 voltage range are.

- $E_i$  is the active energy extracted over the year during time interval  $i$ , expressed in kWh;
- $P_j$  is the power exceedance averaged over ten minutes in kW;
- $j$  is the set of 10-minute exceedance points for time range  $i$ ;
- For the MV 1 tariff, the exceedance coefficient is 0.11 (instead of 0.04 for HV-B 1 and HV-B 2).

The fixed part represents the cost to the network of making the subscribed power available to the main power supply.

The variable part corresponds to the sum of the energy part (the energy extracted over the year) and the exceedances of subscribed power for the 12 months of the year (the 12 CMDPS for the year).

### Example of calculation for the CS without exceedances

Subscribed Capacities		N. COEFF		D. Powers	
PS <sub>1</sub> - 10,000 kW	12.23	16,000	16,000 - 16,000	= €243,600/year	
PS <sub>2</sub> - 18,000 kW	11.85	18,000 - 16,000	= €20,800/month		
PS <sub>3</sub> - 18,000 kW	9.68	18,000 - 18,000			
PS <sub>4</sub> - 22,000 kW	7.94	22,000 - 18,000			
PS <sub>5</sub> - 22,000 kW	3.73	22,000 - 22,000			
Subscribed Capacities January 2019:		COEFFICIENT		Energy extracted	
ES <sub>1</sub> - 10,000 kW	0.02	0.02	1,000,000	= €63,000.29	
ES <sub>2</sub> - 18,000 kW	0.01	0.01	5,480,132		
ES <sub>3</sub> - 18,000 kW	0.01	0.01	5,202,478		
ES <sub>4</sub> - 22,000 kW					
ES <sub>5</sub> - 22,000 kW					
CS Total <sub>2019</sub> = €90,661.82		(Except exceedances)			

### Focus on the monthly component for subscribed capacity exceedances (CMDPS)

The monthly component for subscribed capacity exceedances (CMDPS) represents the cost that you will have to pay if you are soliciting the network beyond your subscribed power.

These exceedances are added up monthly and for each time range. For each time range, the extracted power is read in 10-minute increments.

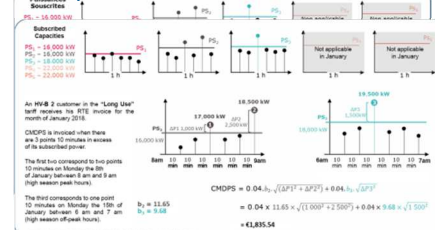
Over the same month, since the  $b_i$  coefficients may vary due to a change in the tariff version, RTE has chosen to integrate this coefficient into the square root, in order to minimize the cost of your exceedances. The formula then becomes:

$$CMDPS = \sum_{i=1}^5 0.04 \times \sqrt{b_i^2 \times \sum_j (P_j - PS_i)^2 + b_i'^2 \times \sum_j (P_j - PS_i)^2}$$

Where:

- $i$  denotes the time interval;
- $b_i$  is the weighting factor of the capacity defined by time interval  $i$  according to the voltage range and the tariff version concerned, for the tariff version before the change;
- $b_i'$  is the weighting factor of the capacity defined by time interval  $i$  according to the voltage range and the tariff version concerned, for the tariff version after the change;
- $PS_i$  is the subscribed power of time interval  $i$ ;
- $P_j$  is the power exceedance averaged over ten minutes in kW before the tariff version changes;
- $j$  is the set of 10-minute exceedance points for time range  $i$  before the tariff version changes;
- $P_j'$  is the power exceedance averaged over ten minutes in kW after the tariff version changes;
- $j'$  is the set of 10-minute exceedance points for time range  $i$  after the tariff version changes;
- For the MV 1 tariff, the exceedance coefficient is 0.11 (instead of 0.04 for HV-B 1 and HV-B 2).

### Example of calculation of the CMDPS



The  $b_i$  and  $c_i$  coefficients used that are applicable to the HV-B 2 voltage range are:



#### For the short use (CU) tariff version

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	0.88	0.80	0.77	0.69	0.38
Weighting coefficient of power $c_i$ (c€/kWh)	1.41	0.88	0.88	0.69	0.55

#### For the average use (MU) tariff version

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	4.57	4.37	4.34	3.44	2.16
Weighting coefficient of power $c_i$ (c€/kWh)	1.19	0.88	0.63	0.49	0.31

#### For the long use (LU) tariff version

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	12.40	11.90	9.89	7.70	3.81
Weighting coefficient of power $c_i$ (c€/kWh)	0.85	0.62	0.44	0.28	0.21

The  $b_i$  and  $c_i$  coefficients used that are applicable to the HV-B 1 voltage range are:

#### For the short use (CU) tariff version

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	2.45	2.04	1.88	1.13	0.61
Weighting coefficient of power $c_i$ (c€/kWh)	2.39	1.94	1.61	1.26	0.90

#### For the average use (MU) tariff version

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	18.41	17.67	14.63	9.90	4.64
Weighting coefficient of power $c_i$ (c€/kWh)	1.75	1.39	0.81	0.59	0.40





Time ranges

HV-B 1

**For the long use (LU) tariff version**

	Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	31.37	30.35	24.45	17.45	8.99
Weighting coefficient of power $c_i$ (c€/kWh)	1.43	1.05	0.62	0.40	0.15

The  $b_i$  and  $c_i$  coefficients used that are applicable to the MV 1 voltage range are:

MV 1

**For the flat peak tariff and the short use (CU) tariff version**

	Flat peak hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	2.61	2.34	1.98	1.80	0.94
Weighting coefficient of power $c_i$ (c€/kWh)	3.06	2.88	2.07	1.92	1.16

**For the flat peak tariff and the long use (LU) tariff version**

	Flat peak hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	16.02	15.48	13.06	8.60	1.64
Weighting coefficient of power $c_i$ (c€/kWh)	2.80	2.10	1.31	0.97	0.86

**For the mobile peak tariff and the short use (CU) tariff version**

	Mobile Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	3.20	2.25	1.98	1.80	0.94
Weighting coefficient of power $c_i$ (c€/kWh)	4.08	2.75	2.07	1.92	1.16

**For the mobile peak tariff and the long use (LU) MV 1 tariff version**

	Mobile Peak Hours (i=1)	Peak Hours of the high season (i=2)	Off-peak hours of the high season (i=3)	Peak Hours of the low season (i=4)	Off-peak hours of the low season (i=5)
Weighting coefficient for power $b_i$ (€/kW/year)	18.42	17.12	13.06	8.60	1.64
Weighting coefficient of power $c_i$ (c€/kWh)	3.20	1.93	1.31	0.97	0.86



## The annual component for complementary and backup supplies (CACS)

Supplementary power supplies and emergency power supplies are subject to a fixed rate. It is based on the parts that are dedicated to you, depending on the number of cells, the lines' length and type (overhead or underground).

If the backup power supply is connected to the same voltage range as that of the main power supply and is connected to a transformer on the public network different from that used for the main power supply, it will incur an additional fixed charge for power reserves.

Load extractions performed on a backup at the same voltage range as the main power supply are invoiced under the extraction component (CS) and the monthly components for

subscribed capacity exceedances (CMDPS) for the main power supply.

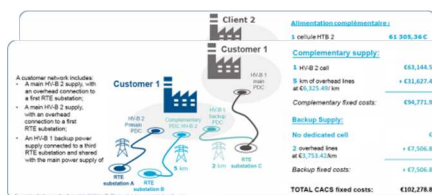
Extractions and exceedances of subscribed power from the emergency power supply are then invoiced according to a specific tariff.

Please note that if several customers are connected to a single backup line that supplies exclusive backup power, the fixed costs are prorated on the basis of the subscribed power of each customer connected to this connection.

### Fixed costs for complementary and backup supplies

Voltage range	Cells (€/cell/year)	Lines (€/km/year)
<b>HV-B 3</b>	106,964.51	10,136.17
<b>HV-B 2</b>	64,508.44	Overhead lines: 6,462.12 Underground lines: 32,309.44
<b>HV-B 1</b>	33,507.00	Overhead lines: 3,834.50 Underground lines: 7,668.97
<b>MV</b>	3,266.04	Overhead lines: 890.94 Underground lines: 1,336.40

### Fixed CACS costs calculation example



### Other power supply costs for power supply backups

Voltage range	€/kW/year or €/kVA/year
HV-B 2	1.55
HV-B 1	2.98
MV	6.38

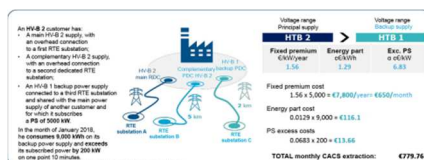
### Specific charges for backup power supplies from a different voltage range than the main power supplies

If the backup power supplies are of a different voltage range than the main power supplies and are equipped with a meter measuring the active power exceedances, the monthly component of the subscribed power exceedance shall be calculated according to the following formula:

$$CMDPS = \alpha \cdot \sqrt{\sum (\Delta P_2)}$$

Voltage range of the main power supply	Voltage range of the backup power supply	Fixed premium €/kW/year	Energy part c€/kWh	$\alpha$ c€/kW
HV-B 3	HV-B 2	7.41	0.77	31.39
	HV-B 1	5.45	1.32	23.25
HV-B 2	HV-B 1	1.59	1.32	6.98
	MV	8.27	1.79	66.40
HV-B 1	MV	2.88	1.79	23.57

### Example of the calculation of PS extractions and exceedances on a backup power supply



### The grouping component (CR)

If you have separate connection points to the Public Transmission System on your site with the same voltage and that are equipped with remote-controlled meters, you can benefit from the conventional grouping of all or part of these connection points.

The grouping component depends on the set of powers subscribed to at the grouping point and on the total length of the network and the type of connection (overhead or underground) necessary for the grouping of the connection points.

This system can allow you to optimize your invoice by multiplying your different

extractions. The component is calculated annually using the following formula:

$$CR = (L_a \times k_a + L_s \times k_s) \times PS_{\text{grouped}}$$

Where:

- $(L_a + L_s)$  is the smallest total length of the electrical structures on the RPT that physically enable the grouping, with  $L_a$  being the length of the overhead lines and  $L_s$  being the length of the underground lines,
- $k_a$  and  $k_s$  the grouping coefficients for overhead and underground lines, respectively,
- $PS_{\text{grouped}}$  equals the grouped subscribed power of the grouping point, except for the HV-B 3 range, where it is equal to the maximum hourly extraction capacity of the grouping point observed over the last 12 months.

Except for HV-B 3, the grouped subscribed power is calculated according to the following formula:

$$PS_{\text{grouped}} = PS_1 \sum_{i=2}^{n5} \frac{b_i}{b_1} \times (PS_i - PS_{i-1})$$

Where:

- $i$  denotes the time interval,
- $PS_i$  is the subscribed power for time interval  $i$ ,
- $b_i$  is the weighting factor of the capacity defined by time interval  $i$  and the tariff version.

The  $k$  coefficients used are:

Voltage range	k (c€/kW/km/year)
HV-B 3	5.81
HV-B 2	Overhead lines: 15.12 Underground lines: 58.12
HV-B 1	Overhead lines: 76.73 Underground lines: 134.87
MV	Overhead lines: 50.00 Underground lines: 73.00



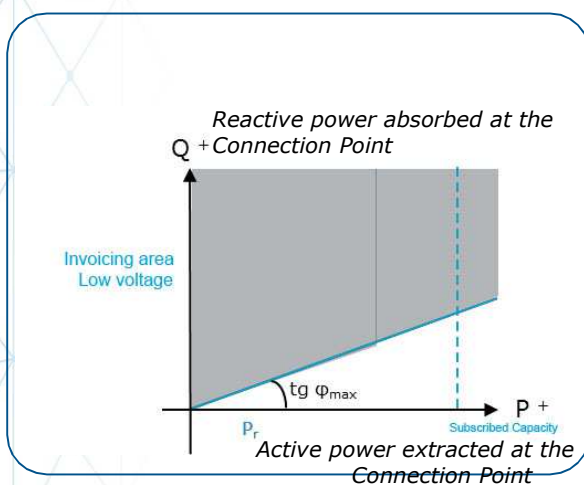
### The annual component for reactive energy (CER)

The reactive energy extracted is invoiced from November to the end of March.

For the period between November and the end of March, if the quantity of reactive energy extracted from 6am to 10pm, Monday through Saturday in HTB 3, and from 7am to 11pm, during working days in HV-B 1 and HV-B 2 is greater than 40% of the amount of active energy consumed, this surplus of reactive energy extracted is charged to you according to the voltage range.

*Invoicing for the extracted reactive energy on August 1st, 2019*

Voltage range	tg $\phi_{\max}$ ratio	Coefficients in c€/kvar.h
HV-B 3	0.4	1.50
HV-B 2	0.4	1.61
HV-B 1	0.4	1.81
MV	0.4	1.94





### Extraction flow

From April to October, RTE offers free reactive energy. From November to March, you may be invoiced under the conditions described in the previous paragraph.

From November to the end of March				
Consumer & Producer	HV-B 3	Invoicing	From Monday to Saturday	from 6am to 10pm
		No invoicing	From Monday to Saturday	from 10pm to 6am
	HV-B 2 HV-B 1	Invoicing (peak hours and peak hours of the high season)	Sunday	for 24hrs
			From Monday to Friday	from 7am to 11pm
		No invoicing (off-peak of the high season)	From Monday to Friday	from 11pm to 7am
			Saturday, Sunday and public holidays	for 24hrs

# Invoicing terms

## The invoicing of HV-B 3 extraction not adjusted for time/season

For HV-B 3, this component is calculated only from the energy E extracted during month M, according to the formula:

$$CS = c \times E$$

Its monthly amount for month M is invoiced at the beginning of month M + 1 (in arrears).

## The invoicing of HV-B 2, HV-B 1 and MV extraction adjusted for time/season

For voltage ranges adjusted for time/season, the annual amount of the extraction component is found using the following formula:

$$CS = \text{Fixed part} + \text{variable part}$$

Where:

$$\text{Fixed part} = b_1 \times PS_1 + \sum_{i=2}^5 b_i \times (PS_i - PS_{i-1})$$

And:

$$\text{Variable part} = \sum_{i=1}^5 c_i \times E_i + \sum_{12 \text{ months}} \text{CMDPS}$$

Where:

- i denotes the time interval;
- $b_i$  is the weighting factor of the capacity defined by time interval i and the tariff version;
- $PS_i$  is the subscribed power for time interval i;
- $c_i$  is the weighting factor of the energy for time interval i and the tariff version concerned;
- $E_i$  is the active energy extracted over the year during time interval i, expressed in kWh.

Please note that in case of changes to the subscribed power and/or tariff version during the year:

- The annual fixed portion corresponds to the intraday pro rata temporis of the annual fixed parts corresponding to each unique set of subscribed power and tariff version;
- The monthly CMDPS distinguishes the exceedances associated with each tariff version in effect for the month in question.

### Invoicing for the fixed part

The monthly amount for the fixed part for month M is invoiced at the beginning of month M (in arrears). It corresponds to one 12<sup>th</sup> of the fixed annual part.

### Invoicing for the variable part

The total for each of the invoicing elements for month M, with the exception of the fixed part, shall be invoiced at the beginning of the following month, M+1 (in arrears).

## Contribution

The tariff does not include taxes. A contribution is added to your invoice.

### Transmission Tariff Contribution (CTA)

Since January 1<sup>st</sup>, 2005, RTE collects the Transmission Tariff Contribution from Consumers and Generators. Calculated on the fixed part excluding taxes, management fees, the annual metering component and the costs of the dedicated parts and power reserves of the annual component of the complementary and back-up power supplies of the Public Transmission System access tariff, it is then transferred by RTE to the Caisse Nationale des Industries Electriques et Gazières.

Rates are set by ministerial order. For information, the rates applicable on August 1<sup>st</sup>, 2017 are 10.14% for transmission services and 27.04% for distribution services (MV backup).

## Payment terms

You can pay your bill by check, wire transfer or direct debit.

RTE offer a free electronic invoicing service.

# Appendices

## Definitions

### Main power supply

A set of attachment structures that ensure the transfer of energy and the availability of the extraction capacity to which the User has subscribed and/or the maximum agreed Injection capacity under normal operation of the User's electrical structures.

### Complementary supply

A set of attachment structures that ensure the transfer of energy, and are in the same Voltage Range as the Principal Supply and not necessary to the supply of the Site. The User Supplies that are neither the Principal Supplies nor Backup Supplies, are the Complementary Supplies for this User.

Connection voltage (Un)	Voltage range		
Un ≤ 1 kV	LV		Low voltage range
1 kV < Un ≤ 40 kV	MV 1	MV range	High voltage range
40 kV < Un ≤ 50 kV	MV 2		
50 kV < Un ≤ 130 kV	HV-B 1	HV-B range	
130 kV < Un ≤ 350 kV	HV-B 2		
350 kV < Un ≤ 500 kV	HV-B 3		

The tariffs applicable to Users connected to the public networks in MV 2 are those from the HV-B 1 voltage range.

### Active energy

All of the active power  $P$  during a defined time period.

### Reactive energy

All of the reactive power  $Q$  during a defined time period.

### Subscription Period

Duration of validity of a Subscribed Capacity subscription. This is normally 12 months but may be of shorter duration, particularly where the Subscribed Capacity is modified. At each

### Backup supply

A set of attachment structures kept live, but which is used for the transfer of energy between the Public Transmission or Distribution Network and the installations of one or more Users only in the event that all or part of their main and complementary supplies are unavailable.

### Voltage range

The Voltage Ranges of the alternating current Public Transmission and Distribution Networks are defined in the table below:

modification of Subscribed Capacity the Subscription Period is renewed for 12 months. If not modified, the Subscribed Capacity is tacitly renewed for a new Subscription Period.

### Time Range

For all Usage Tariffs on the public power networks, all times of the year during which the same tariff coefficient applies.

### Metering point

Physical point where the instrument transformers for metering the energy flows are located.

**Connection Point:**

The User's Connection Point(s) to the public power network coincide with the ownership boundary between the User's electrical structures and the electrical structures of the public network, generally at the end of an electrical structure, embodied by a switching device. The term "switching device" is understood to mean an apparatus installed on an electrical network, making it possible to interrupt a non-zero current flowing between the two ends of this apparatus.

**Subscribed Capacities:**

Capacity that the Customer determines at the Connection Point, in accordance with his RPT needs. Capacity deemed to be in excess of the Subscribed Capacity corresponds to an exceedance.

The term MV refers to the MV 1 voltage range. The MV 2 voltage range is clearly mentioned

**Public Transmission Network Usage Tariff :**

The Public Transmission Network and Distribution Network Usage Tariffs (TURPE) applicable to users. These tariffs are calculated in a non-discriminatory manner in order to cover all costs resulting from the execution of public service contracts and tasks.

**Tariff version:**

For HV-B 2 and HV-B 1 tariffs adjusted for time/season, there are three tariff versions:

- short use (CU),
- average use (MU),
- long use (LU).

For the MV 1 tariff, there are 2 tariff versions:

- short use (CU),
- long use (LU).



## HV-B 2, HV-B 1 and MV time ranges

The high season extends from November to March, the low season extends from April to October.

- Peak hours are from 9-11am and 6-8pm, December-February.
- High peak hours are from 7am-11pm during weekdays, excluding peak hours previously set.
- Off-peak hours are from 11pm-7am during weekdays, and on Saturdays, Sundays and public holidays.

For the mobile MV tariff, mobile peak hours are the hours of the PP1 period of the capacity mechanism (10 to 15 days a year, from 7am to 3pm and from 6pm to 8pm).

For the fixed MV tariff, peak hours are the same as for HV-B 1 and HV-B 2 tariffs.

High season						Low season		High season			
High season		February		March		April to October		Novembre		December	
7am	9am	7am		7am	11pm	7am	11pm	7am	11pm	7am	9am
9am	11am	9am	11am							9am	11am
11am	6pm	11am	6pm							11am	6pm
6pm	8pm	6pm								6pm	8pm
8pm	11pm	8pm	11pm							8pm	11pm
11pm	7am	11pm	7am	11pm	7am	11pm	7am	11pm	7am	11pm	7am
Saturdays, Sundays and public holidays											
12am	24h	12am	24h	12am	24h	12am	24h	12am	24h	12am	24h
				Option 31 modular SH days				Option 30 modular SH days			
Peak Hours		High Season Peak Hours		High Season Of f-peak Hours		Low Season Peak Hours		Low Season Of f-peak Hours			

## 3 new tariff versions corresponding to 3 consumption profiles

With the implementation of TURPE 5, the "tariff versions" replace the "tariff options" used in TURPE 4. There are three tariff versions, called short use (CU), average use (MU) and long use (LU).

For the HV-B 1, HV-B 2, MV 1 and MV 2 ranges, they apply to the Injection Consumption Point of Delivery and are subscribed for a minimum period of 12 months. Beyond this time, a customer can now modify his tariff version any day of the month and without notice. The new version then takes effect the day after the request for a new period of at least 12 months. In case of tariff grouping, only one tariff version applies.

On the other hand, these tariff versions do not apply:

- To the connection points on the HV-B 3 voltage range;
- To the connection points dedicated to a backup power supply at a voltage range lower than that of the main power supply.

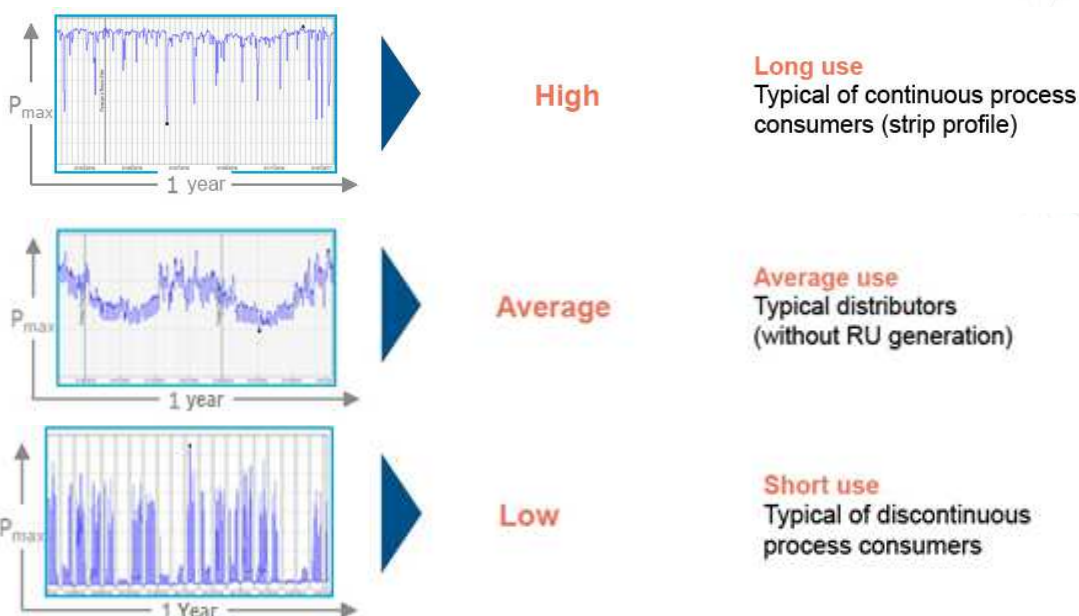
For the customer, the optimal tariff version tends to reflect the ratio between the energy consumed over 1 year and the maximum power demanded over the same period:

$$\frac{\text{Energy 12 months}}{P. \max_{\text{extracted}}}$$

This ratio, which is provided as a guideline only, can assist the customer in his tariff version choice.

However, there is no threshold value for the Power to Capacity ratio that can be used to attribute a tariff version to a consumption profile. The best tariff version for a given consumption profile must therefore be determined on a case-by-case basis.

It necessarily involves carrying out simulations on the customer's load curve and simultaneously optimizing the tariff version and the subscribed power set.



## Managing your subscribed capacities

The subscribed capacity is set for 12 months. However, during this period, it can be amplified or diminished in accordance with the terms of the contract. In the HV-B 2, HV-B 1 and MV tariff that is adjusted for time/season, each subscribed capacity (PS) on each time range is modified independently of the others, in compliance with the following rule:



You can now change your subscribed capacity several times during the same billing month, up to once a day.

The change takes effect on the date you indicated on your request, which must be no earlier than 3 working days after your request.



When the network needs to be strengthened, it shall apply to the first day of the month following the date strengthening work has been completed.

The principles for modifying subscribed capacities are the following:

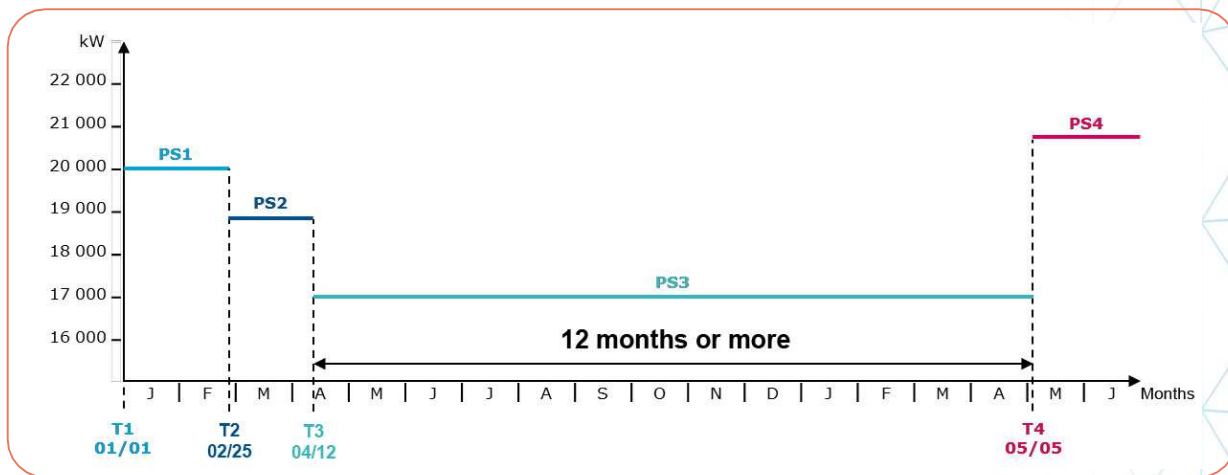
- You can freely proceed with a succession of consecutive reductions if you have not increased your subscribed capacity during the last 12 running months;
- You can increase your subscribed power at any time **if the capacity of the network allows it.** However, if you have reduced your power during the last 12 months, you will be asked for a financial adjustment.

### Three cases of increase after a PS reduction

For tariffs adjusted for time/season, the following cases apply independently for each time range.

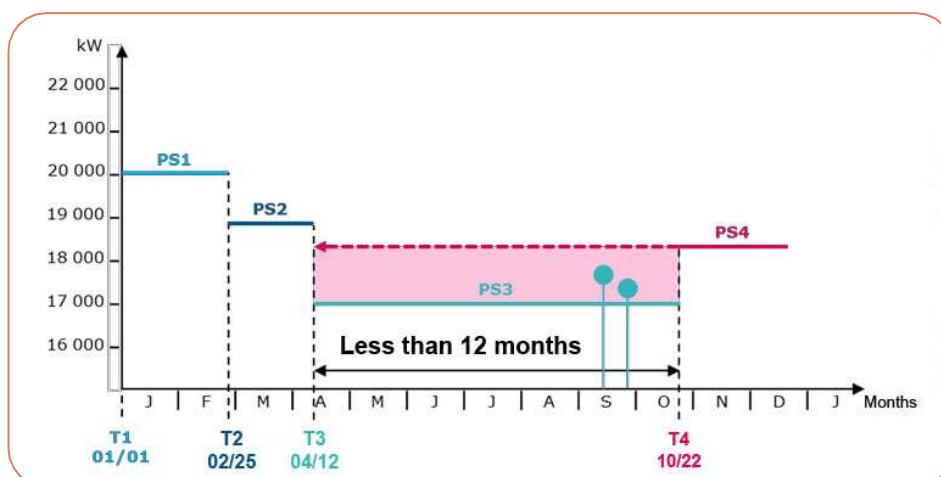
*Case 1: The new PS (PS4) is higher than PS (PS3) that remained unchanged for 12 months*

- During the last 12 running months, the PS (PS3) remained unchanged.
- The PS (PS4) applies on the effective date of the T4 request.



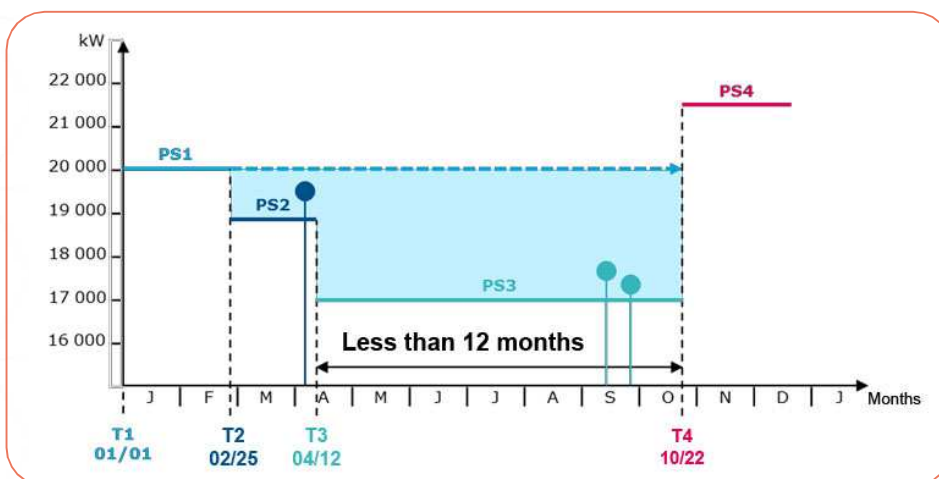
*Case 2: The new PS (PS4) is lower than the PS before the last decrease (PS2) performed less than 12 months ago*

- PS4 applies to the effective date of the last decrease in the last 12 months which led to a capacity that is less than or equal to the new subscribed capacity from T3.
- The regularization of the fixed part of the CS is requested for the differential between PS3 and PS4, for the entire period between T3 and T4.
- PS (PS3) exceedances that happened between T3 and T4 remain with RTE.
- PS4's subscription period starts in T3.



*Case 3: The new PS (PS4) is higher than the PS before the first decrease (PS1) performed less than 12 months ago*

- The PS (PS4) applies on the effective date of the T4 request.
- PS (PS2 and PS3) decreased are canceled.
- The regularization of the fixed part of the CS is requested for the differential between PS1, PS2, and PS3 for the entire period between T2 and T4.
- PS (PS2 and PS3) exceedances that happened between T2 and T4 remain with RTE.
- PS4's subscription period starts in T4.





## Examples of calculations for certain tariff components

### Example of calculation for the CS without exceedances

An **HV-B 2** customer in the « **Long Use** » tariff receives his RTE invoice for the month of January 2020.

For its only main power supply, this customer has subscribed to powers ranging from 16,000 to 22,000 kW, distributed using the collating principle.

Since January is not part of the low season, only the high and peak hour periods are used to charge for energy.

#### Subscribed Capacities

PS<sub>1</sub> – 16,000 kW  
PS<sub>2</sub> – 16,000 kW  
PS<sub>3</sub> – 18,000 kW  
PS<sub>4</sub> – 22,000 kW  
PS<sub>5</sub> – 22,000 kW

Fixed Part =

#### b<sub>i</sub> (€/kW)

12.40  
11.90  
9.40  
7.70  
3.81

#### Δ Powers

16,000  
16,000 – 16,000  
18,000 – 16,000  
22,000 – 18,000  
22,000 – 22,000

= €248,000/year

= €20,666.66/month

#### Energie soutirée (January 2020)

E1 – 1,930,454 kWh  
E2 – 5,469,132 kWh  
E3 – 3,252,478 kWh  
E4 – 0 kWh  
E5 – 0 kWh

Energy Part =

#### C<sub>i</sub> (c€/kWh)

0.85  
0.62  
0.44

#### Energie extracted

1,930,454  
5,469,132  
3,252,478

= €64,628.38

**CS Total<sub>Jan2020</sub> = €85,295.04**

(Except exceedances)

Example which uses the August 1st 2019 tariff. Their value is reassessed each year

### Example of calculation of the CMDPS

#### Subscribed Capacities

PS<sub>1</sub> – 16,000 kW  
PS<sub>2</sub> – 16,000 kW  
PS<sub>3</sub> – 18,000 kW  
PS<sub>4</sub> – 22,000 kW  
PS<sub>5</sub> – 22,000 kW

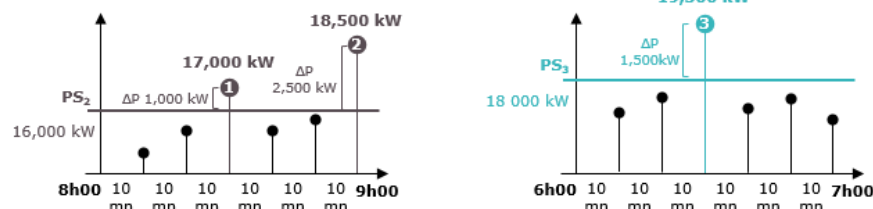


An **HV-B 2** customer in the « **Long Use** » tariff receives his RTE invoice for the month of January 2020.

CMDPS is invoiced when there are 3 points 10 minutes in excess of its subscribed power.

The first two corresponds to two points 10 minutes on Monday January 8th between 8 am and 9 am (high season peak hours)

The third corresponds to one point 10 minutes on Monday January 15th, between 6 am and 7 am (high season off-peak hours).



b<sub>2</sub> = 11.90  
b<sub>3</sub> = 9.89

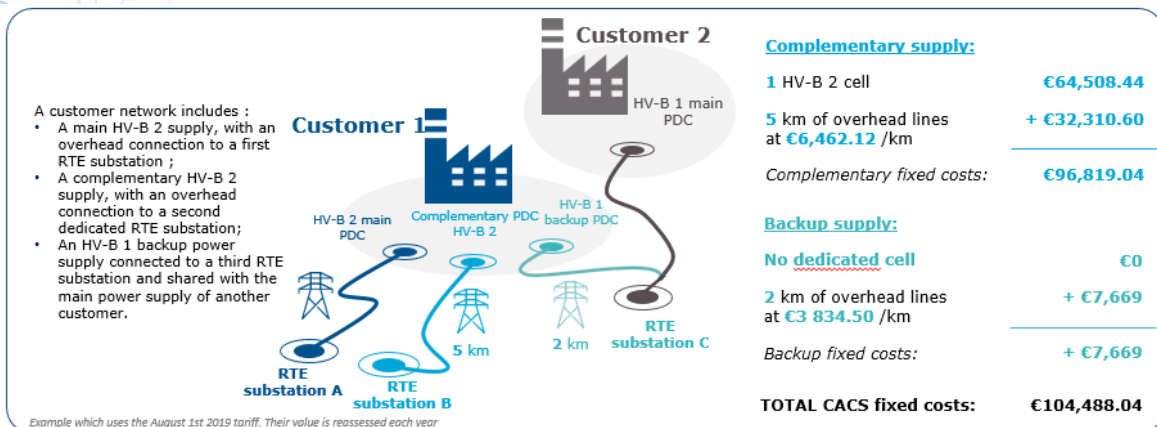
$$\text{CMDPS} = 0.04 \cdot b_2 \cdot \sqrt{(\Delta P_1^2 + \Delta P_2^2)} + 0.04 \cdot b_3 \cdot \sqrt{\Delta P_3^2}$$

$$= 0.04 \times 11.90 \times \sqrt{(1000^2 + 2500^2)} + 0.04 \times 9.89 \times \sqrt{1500^2}$$

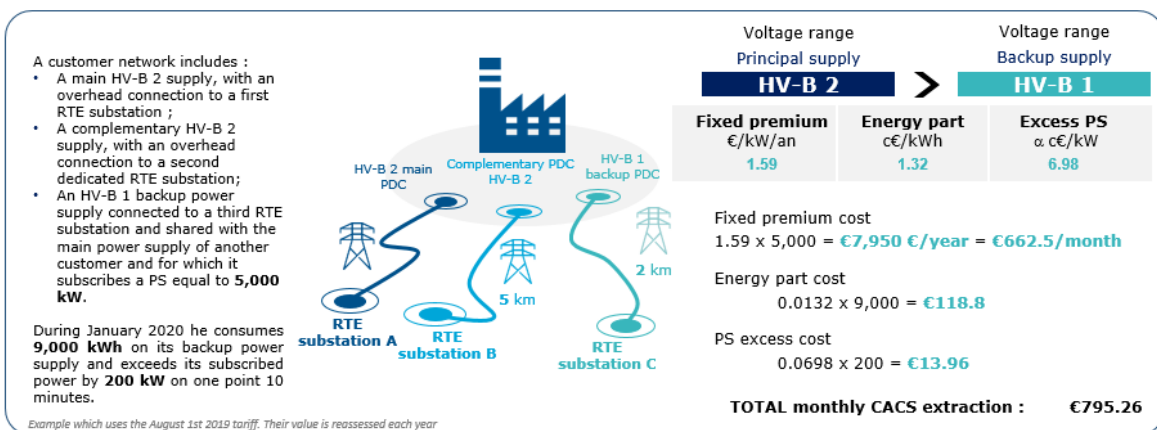
$$= \mathbf{€1,875.07}$$

Example which uses the August 1st 2019 tariff. Their value is reassessed each year

## Fixed CACS costs calculation example



## Example of the calculation of PS extractions and exceedances on a backup power supply

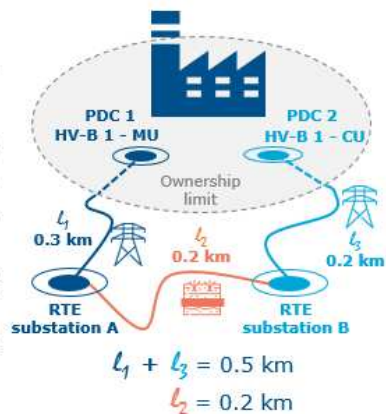


## Example of calculation of the grouping component of 2 connection points

A client combines two Connection Points in HV-B 1: the first in the MU tariff and the second in the CU tariff.

The shortest distance of the public transport network to connect two connection points is 0.7 km, made up of 0.2 km of underground connections and 0.5 km of overhead lines.

For the grouping point the sum of the synchronous load curves of PDCs 1 and 2 gives a theoretical load curve, from which the optimum PS sets and the most suitable tariff are determined.



### 1. Grouping Point: HV-B 1 average use

Optimum PS set (MW)					$\beta$ coefficients (in %)				
HPTE (i=1)	HPSH (i=2)	HCSH (i=3)	HPSB (i=4)	HCSB (i=5)	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$	$\beta_5$
36.5	36.5	36.5	37	37	100	96	79	54	25

With  $\beta_i = b_i/b_1$

### 2. Calculation of the $PS_{\text{grouped}}$

$$PS_{\text{grouped}} = PS_1 + \sum_{i=2}^5 \beta_i \cdot (PS_i - PS_{i-1})$$

$$= 36,500 + 0.96 \times 0 + 0.79 \times 0 + 0.54 \times 500 + 0.25 \times 0$$

$$= 36,770 \text{ kW}$$

### 3. Grouping component GC

k HV-B 1	Overhead lines	Underground lines
c€/kW/km/year	76.73	134.87

$$GC = \sum k \cdot PS_{\text{grouped}}$$

$$= [(0.2 \times 1.3487) + (0.5 \times 0.7673)] \times 36,770$$

$$= \text{€}24,025.15/\text{year}$$

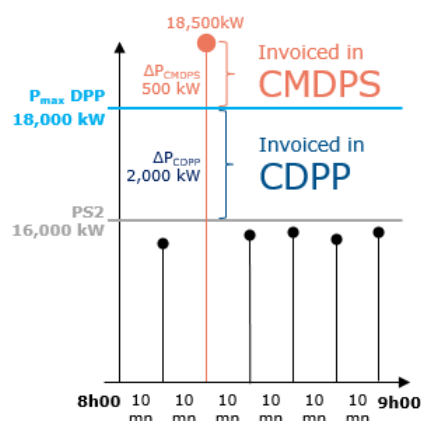
Example which uses the August 1st 2019 tariff. Their value is reassessed each year

## Example of calculation of CDDP

An HV-B 2 customer in the « Long Use » tariff benefits from the specific rate for one-time exceedances over 3 days in November.

During the high season peak hours for which the customer's power is worth 16,000 kW, the maximum work capacity requested under the DPP is 18,000 kW.

During these 3 days, he exceeds his subscribed power on one point 10 minutes by drawing 18,500 kW.



Example which uses the August 1st 2019 tariff. Their value is reassessed each year

Weighting coefficient

$b_2$

11.90

Coefficient  $\alpha$

HTB 2

0.000150

### CDDP invoicing for exceedances

$$CDDP = 0.000150 \times 11.90 \times 2,000$$

$$= \text{€}3.57$$

### CMDPS invoicing for exceedances

$$CMDPS = 0.04 \cdot b_2 \cdot \sqrt{\Delta P_{CMDPS}^2}$$

$$= 0.04 \times 11.90 \times \sqrt{500^2}$$

$$= \text{€}238$$

# Your business contacts

## Sylvain ROMMEL

Sales department of St Denis  
sylvain.rommel@rte-france.com

## Arthur AUDOUARD

Sales department of St-Quentin  
arthur.audouard@rte-france.com



## Hélène CHAMPION

Sales department of Lille  
helene.champion@rte-france.com



## Virginie BERTIN

Sales department of Nancy  
virginie.bertin@rte-france.com



## Benoît GIRAUDET

Sales department of  
Nantes  
benoit.giraudet@rte-france.com



## Dominique CHERBLANC

Sales department of Lyon  
dominique.cherblanc@rte-france.com



## Cyril GALABERT

Sales department of  
Toulouse  
cyril.galabert@rte-france.com



## Véronique HUGNY

Sales department of Marseille  
Veronique.hugny@rte-france.com



Rte

Le réseau  
de transport  
d'électricité

## CORPORATE

Tour Initiale – 1, terrasse Bellini – TSA 41 000  
92919 Paris la Défense cedex