

GridTariffAPI (nettleie API) for smart house purposes

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Changelog:

2021-02-12: Changed from “Prerequisites” to “TERMS & CONDITIONS” and splitted details for private/business users. Added api function call meteringpointsgridtariffs”

Purpose

The GridTariffAPI (Nettleie API) offers all private grid tariffs (nettleie for privatkunder) and its prices per hour.

The purpose of the API is to enable use of grid tariff prices as an input in smart home solutions for controlling your power/energy consuming devices.

TERMS & CONDITIONS

- Elvias responsibility
 - Elvia takes no responsibility of any financial or physical damage to you or your company based on the use of this API
 - Elvia strives to keep the API up and running at all times, but Elvia gives no guarantees for uptime
 - The API is versioned and Elvia will strive to keep versions available for as long as possible, and to alert the registered user in case of changes to the existing version(s)

- The prices in the API is for smart house controlling purposes, not for rating purposes, so there might be differences between the prices in this API and on your invoice. This is i.e. due to rounding issues (example: 2 vs 3 decimals)
- You need basic knowledge about development and use of API's to use this service.
- Customer services/**Elvia kundesenter can not help you with guidance** about using the API.
- In case of problems with registration or using the API, see GridTariffAPI documentation and examples further down.
- The API uses basic authentication. Remember that your primary and secondary keys are personal(or your company's) and must not be shared with others.
- Your user may be inactivated/deleted if we suspect that the key is being misused.

For private users:

- You may use the API for:
 - your private smart house solution(s)
- You **MAY NOT** use this API or the prices published by this API for:
 - competitive or proxy services
 - requesting prices for other MPIDs than your private MPID(s)

For business users:

- Use a company email when registering
- You may use the API for:
 - your company's and your customers' smart house solutions or solutions directly related to smart use of energy and power consumptions
- You **MAY NOT** use this API or the prices published by this API for:
 - competitive or proxy services
 - requesting prices for other MPIDs than the MPIDs provided to your company under a legal basis compliant with §1 in "Personopplysningsloven"(also referred to as GDPR/Personvernforordningen)

User registration and authentication

- Go to [Elvia developer portal](#) and Sign up. (Register a private or a company email)
- When successfully registered, sign in and go to [Products - GridTariffAPI](#) and request for subscription
 - Only request for subscription to the GridTariffAPI (any other visible APIs are for internal use)
- The request for subscription will normally **be approved within 8 working hours**
- When subscription is approved, you will find generated API keys in your [Profile](#)
- If you have trouble registering a user, you can send an email to pilot@elvia.no

GridTariffAPI documentation and examples

Use of the API

The prices in the API (nettleiepriser) are due to future changes, but price changes are typically done once or a few times per year, beginning at the start of the year or month. Based on this, there is no need for extensive calls to the API, and you should base your solution on storing the prices locally and call the API every now and then instead of all the time. See “API limitations” further down.

The API will of course publish the correct prices per hour, including any future price changes.

In case you find any bugs/issues, please report them to us using the “Report issue” button on the [Issues page](#).

API limitations

The API is limited to a number of 200 calls per hour per user.

API documentation

API definition: Go to [APIs](#) page, click “GridTariffAPI”, choose “API definition” (upper right corner).

Test the get calls: Go to [APIs](#) page, click “GridTariffAPI” and you will see the available get calls and code examples for different programming languages.

Useful function calls:

- GET “Service returns all available private tariff types”
- GET “Returns tariff data/prices for a given tariff for a given timeperiod”
- POST “Returns tariff data/prices for a given time period for a given MeteringpointId”

GET “/api/{v}/tarifftype”:

- Get all available private tariff types
 - Query parameters:
 - v: 1 (this is the version no)
 - Headers:
 - Ocp-Apim-Subscription-Key: <primary key>
 - Authorization:

- Subscription key: <primary key>
- Request url:

```
https://elvia.azure-api.net/grid-tariff/api/1/tarifftype
```

- Response example: (only first response element included)

```
Transfer-Encoding: chunked
Api-Supported-Versions: 1.0
Request-Context: appId=cid-v1:4467fb4e-3436-48fc-b173-9464bd458d3a
Date: Fri, 20 Nov 2020 11:44:51 GMT
Content-Type: application/json; charset=utf-8

{
  "tariffTypes": [{
    "tariffKey": "private_tou_rush1",
    "company": "Elvia AS",
    "customerType": "private",
    "title": "Nettleie Rush&Ro (Oslo og Viken)",
    "resolution": 60,
    "description": "Tariff focused on lowering energy consumption during high
consumption periods of the day. Future prices are subject to changes. Applies
to Oslo og Viken."
  }]
}
```

GET “/api/{v}/tariffquery?TariffKey={TariffKey}“

- Get tariff data/prices for a given tariff for a given timeperiod
 - Query parameters (use either <Range> or <StartTime and EndTime>):
 - TariffKey: <tariffkey from the tarifftype get call> (example: “private_tou_rush1” for “Nettleie Rush&Ro (Oslo og Viken)”)
 - v: 1 (this is the version no)
 - Range: yesterday/today/tomorrow (Exclusive OR with StartTime/EndTime)
 - StartTime: <from timestamp> (Inclusive AND with EndTime, Exclusive OR with Range)
 - EndTime: <to timestamp> (Inclusive AND with StartTime, Exclusive OR with Range)
 - Headers:
 - Ocp-Apim-Subscription-Key: <primary key>
 - Authorization:
 - Subscription key: <primary key>
- Request url example:

```
https://elvia.azure-api.net/grid-tariff/api/1/tariffquery?TariffKey=private_to_u_rush1&Range=today
```

- Response example: (only first response elements included in this document)

```
Transfer-Encoding: chunked
Api-Supported-Versions: 1.0
Request-Context: appId=cid-v1:4467fb4e-3436-48fc-b173-9464bd458d3a
Date: Fri, 20 Nov 2020 11:56:40 GMT
Content-Type: application/json; charset=utf-8
{
  "gridTariff": {
    "tariffType": {
      "company": "Elvia AS",
      "customerType": "private",
      "title": "Nettleie Rush&Ro (Oslo og Viken)",
      "resolution": 60,
      "description": "Tariff focused on lowering energy consumption during high consumption periods of the day. Future prices are subject to changes. Applies to Oslo og Viken."
    },
    "tariffPrice": {
      "priceInfo": [{
        "startTime": "2020-11-20T00:00:00+00:00",
        "expiredAt": "2020-11-20T01:00:00+00:00",
        "hoursShortName": "00-01",
        "season": "winter",
        "publicHoliday": false,
        "fixedPrices": [{
          "priceLevel": [{
            "level": "Level2",
            "levelInfo": "Elvia private fixed price component: Oslo og Viken - Rush&Ro og Dag&Natt",
            "total": 0.1597,
            "fixed": 0.1278,
            "taxes": 0.0319,
            "currency": "NOK",
            "uom": "kr/hour"
          }]
        }]
      }],
      "variablePrice": {
        "total": 0.2890,
        "energy": 0.0599,
        "power": 0.0000,
        "taxes": 0.2291,
        "level": "CHEAP",
        "currency": "NOK",
        "uom": "kr/kWh"
      }
    }
  }
}
```

```
}
```

POST `«/api/{v}/tariffquery/meteringpointsgridtariffs»`

- Returns tariff(s) and MPID(s) for the MPIDs(MeteringpointId/Målepunkt-Id) given as input:
 - Query parameters (use either `<Range>` or `<StartTime and EndTime>`):
 - meteringPointIds: `<one MPID(or a comma-separated list) from your invoice or Elvia Min side/app>` (example: “7070575000XXXXXXXXX”)
 - v: 1 (this is the version no)
 - Range: yesterday/today/tomorrow (Exclusive OR with StartTime/EndTime)
 - StartTime: `<from timestamp>` (Inclusive AND with EndTime, Exclusive OR with Range)
 - EndTime: `<to timestamp>` (Inclusive AND with StartTime, Exclusive OR with Range)
 - Headers:
 - Ocp-Apim-Subscription-Key: `<primary key>`
 - Authorization:
 - Subscription key: `<primary key>`
- Request url:

```
https://elvia.azure-api.net/grid-tariff/api/1/tariffquery/meteringpointsgridtariffs
```

Request body example:

```
{
  "range": "today",
  "meteringPointIds": [
    "7070575000XXXXXXXXX"
  ]
}
```

- Response example: (only first response element included in this document)

```
Transfer-Encoding: chunked
Api-Supported-Versions: 1.0
Date: Mon, 15 Feb 2021 08:09:35 GMT
Content-Type: application/json; charset=utf-8

{
  "gridTariffCollections": [{
```

```

"gridTariff": {
  "tariffType": {
    "tariffKey": "private_tou_rush1",
    "company": "Elvia AS",
    "customerType": "private",
    "title": "Nettleie Rush&Ro (Oslo og Viken)",
    "resolution": 60,
    "description": "Tariff focused on lowering energy consumption during high consumption periods of the day. Future prices are subject to changes. Applies to Oslo og Viken."
  },
  "tariffPrice": {
    "priceInfo": [{
      "startTime": "2021-02-15T00:00:00",
      "expiredAt": "2021-02-15T01:00:00",
      "hoursShortName": "00-01",
      "season": "winter",
      "publicHoliday": false,
      "fixedPrices": [{
        "priceLevel": [{
          "level": "Level2",
          "levelInfo": "Elvia private fixed price component: Oslo og Viken - Rush&Ro og Dag&Natt",
          "total": 0.1711,
          "fixed": 0.1369,
          "taxes": 0.0342,
          "currency": "NOK",
          "uom": "kr/hour"
        }]
      }],
      "variablePrice": {
        "total": 0.2835,
        "energy": 0.0499,
        "power": 0.0000,
        "taxes": 0.2336,
        "level": "CHEAP",
        "currency": "NOK",
        "uom": "kr/kWh"
      }
    }], {
    ...
  },
  "meteringPointIds": ["707057500XXXXXXXXX"]
}]
}

```

Important property definitions:

- **startTime:** timestamp when the price is valid from
- **expiredAt:** timestamp when the price has expired
- **season:** season of year, summer or winter (tip: cheaper prices during all summer in pilot tariffs)

- **publicHoliday:** true if this is a public holiday (tip: cheaper prices during all weekend and public holidays in pilot tariffs)
- **fixedPrices:** (fixed price component of the grid tariff, not to be multiplied by consumption)
 - **total:** total fixed price per hour, included taxes
 - **uom:** unit of measure, given in kr/hour
- **variablePrices:** (variable price component of the grid tariff, to be multiplied by your consumption in kWh to find the total cost per hour)
 - **total:** total variable price per hour, including taxes
 - **uom:** unit of measure, given in kr/kWh
 - **level:** identifies the level of the variable price, meaning if this is a VERY_CHEAP,CHEAP,NORMAL,EXPENSIVE or VERY_EXPENSIVE hour (tip: the pilot uses these values for “Nettleie Rush&Ro”: CHEAP,NORMAL,EXPENSIVE and “Nettleie Dag&Natt”: CHEAP,EXPENSIVE)

Roadmap

Background:

The GridTariffAPI is set up as a part of a Elvia pilot project, Aktive Hjem, but the API contains all private grid tariffs in Elvia, both for “Oslo og Viken” and for “Innlandet”.

The two tariffs with variable prices in the pilot are “Nettleie Rush&Ro” and “Nettleie Dag&Natt”.

However, the API is a permanent service from Elvia, and will be improved in the future, based on the experiences from the pilot.

Future version:

In the future we expect to publish a new version including:

- Business tariffs are included, in addition to private tariffs

Privacy

Elvia uses the registered user email only for:

- authentication and authorization purposes, including discovery of misuse of the service

The usage statistics(number of calls and response times) in the API portal is used for operations and improvement purposes.

User email and usage statistics is not shared with anyone.

See also Elvia's [Privacy statement](#)