

NOBIL API

LADDINFRA.SE

Electricity for sustainable energy

Version 3.0

In close cooperation with:



Client API version 3.0

NOBIL (in Sweden under the name Laddinfra.se) is a comprehensive and trustworthy database covering all charging stations in Norway, and is open for other countries, too. Preliminary it is only Sweden and Finland which has trustworthy data in NOBIL. Based on admission to the data, providers and clients can develop new and innovative services for promoting use of electric vehicles.

What is an API?

API stands for Application Programming Interface, and is a piece of software which enables the use of existing systems for a 3rd Party.

How to use the client API

By using http call with different parameters, you can ask the service to return charging station data.

What is needed?

Clients using the API call service have to register at Laddinfra.se. The data required for registration are as follows:

- First name, last name
- Email address
- Organization (if any)
- Mobile Number
- If available, Website Address where service is to be run

After the registration is approved by Laddinfra.se, you will receive an API key. This key must be attached to each request against NOBIL API. This is to identify who uses the service and to ensure NOBIL's data and service. API key is a string. For those who use Google's APIs, this is familiar material. Currently this registration process is done here:

<http://www.laddinfra.se/anvanda-api/>

You must have made you familiar with the licensing text in order to use the charging station data from NOBIL, based on the [Creative Commons 3.0 Unported Lisens](#).

Ver 3.0. has a larger dataset both for charging stations and points. Availability data (status) are included where they are reported to NOBIL. In April 2014 we made a new real time stream API available. It makes it much easier to include real time data and reduce the traffic to our server. We advise you to use this together with the original API we describe in this document. Please look at the documentation for stream API here: <https://github.com/nobil/nobil-stream-api>

An important change from Ver 1.1 to 3.0 is that all data types now are displayed in English. If a user has written data in his og hers native language in the database, those data will get back in that native language.

Another new feature is that JSONP is a possible method of retrieving API data for all the Ajax functions. This makes it possible to get data via AJAX from different domains than NOBIL,

without having to write a server side proxy functionality. Read more on **JSONP** here:

<http://en.wikipedia.org/wiki/JSON#JSONP>

Server side proxy functionalities in services consuming the NOBIL API, could implement better caching mechanisms, which can result in better response and a better user experience.

NOBIL's API supports both HTTP GET and HTTP POST requests for getting data.

Search for charger stations via map references

An example how to do this with AJAX and jQuery:

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: { 'apikey': nobilApiKey, 'apiversion': '3',
         'action': "search",
         'type': 'rectangle',
         'northeast': '(59.943921193288915, 10.826683044433594)',
         'southwest': '(59.883683240905256, 10.650901794433594)',
         'existingids': '189,195,199,89,48'},
  dataType: 'json'
});
```

Parameter	Example values
action	search
apikey	APIkey_that_You_have_received_from_Nobil.no
apiversion	3
existingids	189,195,199,89,48,190,58,77,83,75,63,64,86,181,207,182,180 A list of charger station id's that you don't want back from the server, cause you already have received those and stored them in client store. This is done for saving bandwidth and increase the speed of showing and navigating in online maps like Google Maps.
northeast	(59.943921193288915, 10.826683044433594)
southwest	(59.883683240905256, 10.650901794433594)
type	Rectangle
format (optional)	json or xml

API service response from map area search

The response content type from this type of search is json object.

Example of a JSON object from the server:

```
[{"Provider":"NOBIL.no","Rights":"Creative Commons 3.0 Unported License","apiver":"3", "chargerstations": [{"csmd": {"id":41,"name":"IKEA Slependen","url":"http://www.ladestasjoner.no/v2010/v06/vikea-slependen_08.html","blogpostid":"3599822862656171588","Active":true,"Street":"Nesbruveien","House_number":"40","Zipcode":"1396","City":"BILLINGSTAD","Municipality_ID":"0220","Municipality":"ASKER","County_ID":"02","County":"Akershus","Description_of_location":"Tre plasser i parkeringshuset P1, rett til h\u00f8yve etter innkj\u00f8ring. Slependen. Det finnes ogs\u00e5 3 ladeplasser pl\u00e5 omr\u00e5de L, n\u00e6rmest \"utgang\" i Pkjelleren.","Owned_by":"IKEA","Number_charging_points":6,"Position":{"59.87447,10.49982},"Image":"41.jpg","Available_charging_points":6,"User_comment":"","Contact_info":"48050000 - kar fra IKEA som ringte om videre utbygging.","Created":"2010-03-24 10:24:13","Created_by":4,"Created_by_Forename":"nobilAdmin","Created_by_Surname":"nobilAdmin","Updated":"2011-04-15 12:19:20","Updated_by":5,"Updated_by_Forename":"Hans H.","Updated_by_Surname":"Kvisle","Station_status":1,"Land_code":"nor","International_id":"NOR_00041"}, "attr":{"st":{"24":{"attrtypeid":"24","attrname":"Open 24h","attrvalid":"1","trans":"Yes","attrval":"true"},"21":{"attrtypeid":"21","attrname":"Real-time information","attrvalid":"2","trans":"No","attrval":""},"22":{"attrtypeid":"22","attrname":"Public funding","attrvalid":"4","trans":"None","attrval":""},"7":{"attrtypeid":"7","attrname":"Parking fee","attrvalid":"2","trans":"No","attrval":false},"6":{"attrtypeid":"6","attrname":"Time limit","attrvalid":"2","trans":"No","attrval":""},"3":{"attrtypeid":"3","attrname":"Location","attrvalid":"4","trans":"Shopping center","attrval":""},"2":{"attrtypeid":"2","attrname":"Availability","attrvalid":"1","trans":"Public","attrval":""},"conn":{"1":{"attrtypeid":"1","attrname":"Accessability","attrvalid":"1","trans":"Open","attrval":""},"4":{"attrtypeid":"4","attrname":"Connector","attrvalid":"14","trans":"Schuko CEE 7V4","attrval":""},"5":{"attrtypeid":"5","attrname":"Charging capacity","attrvalid":"7","trans":"230V 1-phase max 16A","attrval":""},"17":{"attrtypeid":"17","attrname":"Vehicle type","attrvalid":"1","trans":"All vehicles","attrval":""},"20":{"attrtypeid":"20","attrname":"Charge mode","attrvalid":"1","trans":"Mode 1","attrval":""},"18":{"attrtypeid":"18","attrname":"Reservable","attrvalid":"2","trans":"No","attrval":""},"25":{"attrtypeid":"25","attrname":"Fixed cable","attrvalid":"2","trans":"No","attrval":""}}}}}]
```

Cross domain Ajax - JSONP

Example of how this can be implemented across different domains using Ajax and JSONP and jQuery:

```
jQuery.ajax({
  url: 'http://nobil.no/api/server/search.php',
  data: {'apikey': nobilApiKey,
        'apiversion': '3',
        'action': "search",
        'type': 'rectangle',
        'northeast': bound.getNorthEast(),
        'southwest': bound.getSouthWest(),
        'existingids': idList},
  success: parseJsonResponse,
  dataType: 'jsonp'
});
```

Parameter	Example values
action	search
apikey	APIkey_that_You_have_received_from_Nobil.no
apiversion	3
existingids	189,195,199,89,48,190,58,77,83,75,63,64,86,181,207,182,180 A list of charger station id's that you don't want back from the server, cause you already have received those and stored them in client store. This is done for saving bandwidth and increase the speed of showing and navigating in online maps like Google Maps.
northeast	(59.943921193288915, 10.826683044433594)
southwest	(59.883683240905256, 10.650901794433594)
type	Rectangle
format (optional)	json or xml

Service response from rectangle map search

The response from the search service is of the type jsonp object. This object is encapsulated in a callback method that is given by the client to the search method as a parameter. In the search request seen above, this function is called «parseJsonResponse».

Response example for the above search request:

```
jsonp1300629903865({{"id":228,"active":true,"name":"Statens arbeidsmiljø00f8institutt,
Oslo","address":"Gydasvei
8","zip":"0383","city":"OSLO","municipalityid":"0301","municipality":"OSLO","countyid":"03","county":"Oslo","di
scription":"","placetype":"Street","accessibility":"Visitors","owner":"Statens
arbeidsmiljø00f8institutt","chargerpointnumber":4,"parkingfee":false,"timelimit":9,"chargerspeed":"16A","geol
ocation":"(59.93255,10.71514)","constructionsupportname":"Oslo
kommune","image":"228.jpg","usercomment":"Tilgjengelig 07-16.00","contactinfo":"Statens
arbeidsmiljø00f8institutt\r\nSteinar Messel\r\nsteinarm@stami.no\r\n23195153","created":"2010-04-14
12:55:02","createdbygivenname":"Hans H.,"createdbyfamilyname":"Kvisle","updated":"2010-06-04
09:56:44","updatedbygivenname":"Hans H.,"updatedbyfamilyname":"Kvisle","accesstype":"Standard
key","url":"http://www.ladestasjoner.no/2010/07/vstatens-arbeidsmiljainstitutt-
oslo_06.html","countrycode":"NO"}]);
```

Get all data on a given charger station

Example implementation done with Ajax and jQuery:

This example gets all data on charger station with id: NOR_00171

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3', 'action': "search",
    'type':'id', 'id': 'NOR_00171'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters	Example values
action	search
apikey	API key
apiversion	3
type	id
id	NOR_00171
Callback function on success	printJsonResponse
format (optional)	json or xml

The function below gets called if the request returns data of type JSON. The function iterates over all object values and adds these to a string. This string then gets displayed in a html div with ID="jsonOutput".

```
function printJsonResponse(data, textStatus, XMLHttpRequest){
  jQuery("#jsonOutput").html(dump(data));
}
```

```
function dump(arr,level) {
  var dumped_text = "";
  if(!level) level = 0;

  //The padding given at the beginning of the line.
  var level_padding = "";
  for(var j=0;j<level+1;j++) level_padding += "  ";

  if(typeof(arr) == 'object') { //Array/Hashes/Objects
    for(var item in arr) {
      var value = arr[item];
```

```
    if(typeof(value) == 'object') { //If it is an array,
      dumped_text += level_padding + "" + item + " ...\n";
      dumped_text += dump(value,level+1);
    } else {
      dumped_text += level_padding + "" + item + " => \"" + value + "\"\n";
    }
  }
} else { //Stings/Chars/Numbers etc.
  dumped_text = "====>" + arr + "<====(" + typeof(arr) + ")";
}
return dumped_text;
}
```


Retrieving statistics for charger stations

The following statistics search method can be used:

stats_TotalsAllCounties

Gets the total count of active charger stations grouped by counties.

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3',
    'action': "search",
    'type': 'stats_TotalsAllCounties',
    'countrycode': 'NO'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters

apikey

apiversion

action

type

countrycode

format (optional)

Callback function on success

Example values

API key

3

search

stats_TotalsAllCounties

NO (ISO 639-1)

json or xml (default json)

printJsonResponse

stats_TotalsByCountyId

Gets the total count of active charger stations for a given county specified by county id. (11=Rogaland)

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3',
    'action': "search",
    'type': 'stats_TotalsByCountyId',
    'id': '11',
    'countrycode': 'NO'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters**Example values**

apikey	API key
apiversion	3
action	search
type	stats_TotalsByCountyId
id	11
countrycode	NO (ISO 639-1)
format (optional)	json or xml (default json)
Callback function on success	printJsonResponse

stats_DetailedTotalsByCountyId

Gets the total count of active charger stations for a given county grouped by municipality specified by county id. (11=Rogaland)

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3',
    'action': "search",
    'type': 'stats_DetailedTotalsByCountyId',
    'id': '11',
    'countrycode': 'NO'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters

apikey

apiversion

action

type

id

countrycode

format (optional)

Callback function on success

Example values

API key

3

search

stats_DetailedTotalsByCountyId

11

NO (ISO 639-1)

json or xml (default json)

printJsonResponse

stats_TotalsByMunicipalId

Gets the total count of active charger stations for a given municipality specified by municipality id. (1103=Stavanger)

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3',
    'action': "search",
    'type': 'stats_TotalsByMunicipalId',
    'id': '1103',
    'countrycode': 'NO'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters

apikey

apiversion

action

type

id

countrycode

format (optional)

Callback function on success

Example values

API key

3

search

stats_TotalsByMunicipalId

11

NO (ISO 639-1)

json or xml (default json)

printJsonResponse

stats_DetailTotalsByMunicipalId

Gets the total count of active charger stations for all zip codes for a given municipality specified by municipality id. (1103=Stavanger)

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey, 'apiversion': '3',
    'action': "search",
    'type': 'stats_DetailTotalsByMunicipalId',
    'id': '1103',
    'countrycode': 'NO'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters

apikey

apiversion

action

type

id

countrycode

format (optional)

Callback function on success

Example values

API key

3

search

stats_DetailTotalsByMunicipalId

11

NO (ISO 639-1)

json or xml (default json)

printJsonResponse

The nearest charger station

Gets the 10 closest charger stations which are within 2000 meters, ordered by meters, nearest first.

```
jQuery.ajax({
  type: 'POST',
  url: 'http://nobil.no/api/server/search.php',
  data: {
    'apikey': nobilApiKey,
    'apiversion': '3',
    'action': "search",
    'type': 'near',
    'lat': '59.91673',
    'long': '10.74782',
    'distance': '2000',
    'limit': '10'
  },
  success: printJsonResponse,
  dataType: 'json'
});
```

Parameters

apikey

apiversion

action

type

lat

long

distance

format (optional)

Callback function on success

Example values

API key

3

search

near

59.91673

10.74782

2000 (metre)

json or xml (default json)

printJsonResponse

NOBIL Data Export

URL: <http://nobil.no/api/server/datadump.php>

Parameters	Example values
apikey	API key
countrycode (optional)	NOR (if no parameter is submitted to the server, all data from all countries is returned)
fromdate (optional)	2012-06-02
format (optional)	json (default format is XML)
file	false (default value is 'true', which returns a file, rather than the text stream)
callback (function on success)	PrintJsonResponse (wrapping data via jsonp)

URL examples:

<http://nobil.no/api/server/datadump.php?apikey=2048b60b804ac019155675421c0ddb13&countrycode=NOR&fromdate=2012-06-02&format=xml&file=false>

<http://nobil.no/api/server/datadump.php?apikey=2048b60b804ac019155675421c0ddb13>

<http://nobil.no/api/server/datadump.php?apikey=2048b60b804ac019155675421c0ddb13&fromdate=2012-06-02&file=false&callback=mycallback&format=json>

Example implementation

Demonstration of these examples can be found here:

http://www.nobil.no/api/client/search_apiVer3.php

Attribute reference

An overview of all attributes and valid values can be found here:

<http://nobil.no/admin/attributes.php>

NOBIL real time stream API

In April 2014 we made a new real time stream API available. It makes it easier to include real time data in your services, and it will reduce the traffic on our server when the collection of real time data is separated from the ordinary API which is more suitable for static data.

We advise you to use the real time stream API together with the original API. Please look at the documentation for stream API here:

<https://github.com/nobil/nobil-stream-api>