Konverto Hackathon Challenge

PowerNap Team

Noi Hackathon Summer Edition - Scena 02.07.2024

Let’s start from facts

➔ **Rising EV Adoption**

EV Market Share on all new cars is expected from 14% on 2021 to 86% in 2030 (source: iea.org)

➔ **Charging infrastructure challenges**

Many regions face a shortage of public charging stations, causing inconvenience and range anxiety among EV users.

➔ **Change in Energy Consumption Pattern**

Charging Electric Vehicles requires time and needs to adapt to people’s lives.

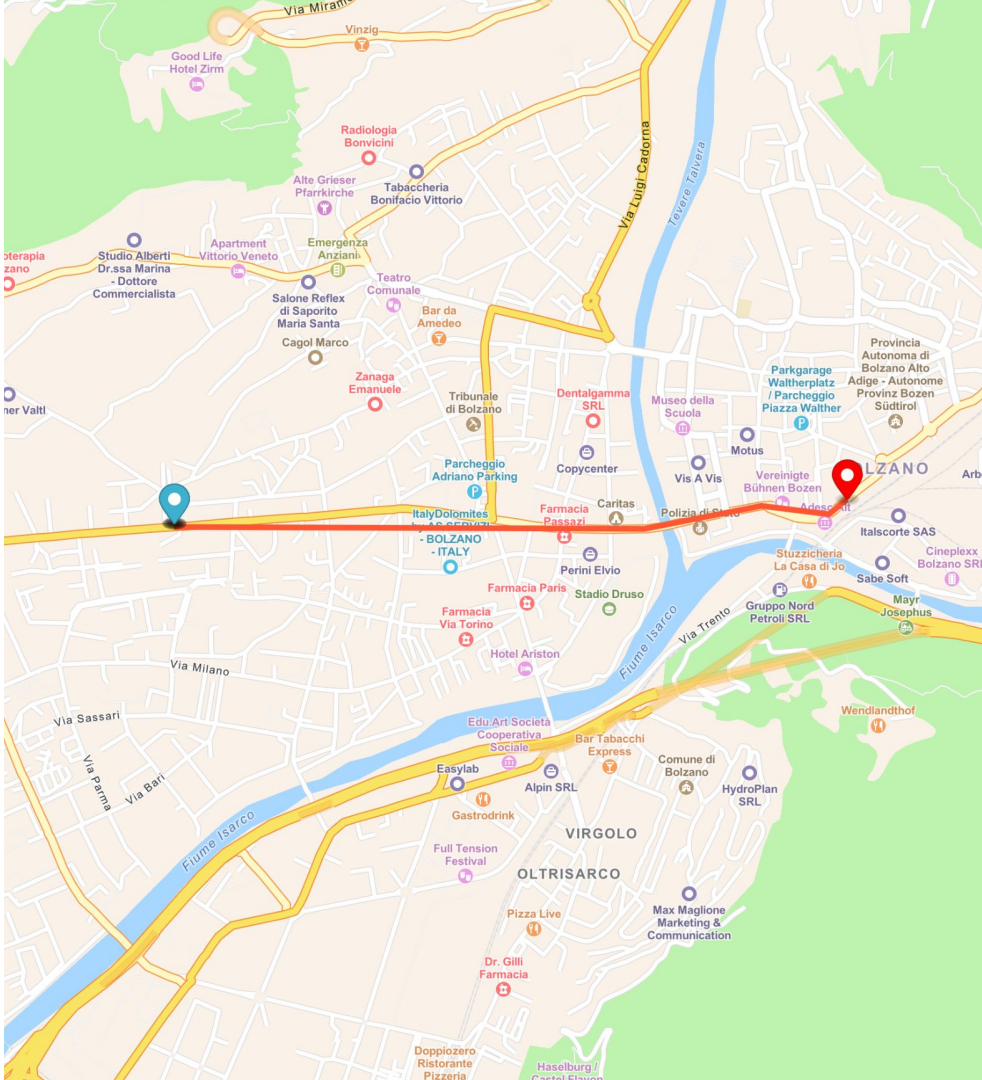
How do you take advantage of your EV charging time?

Examples

How do I find a station close to my appointment **location**?

How do I balance **charging speed** with **cost**?

Let us introduce PowerNap.

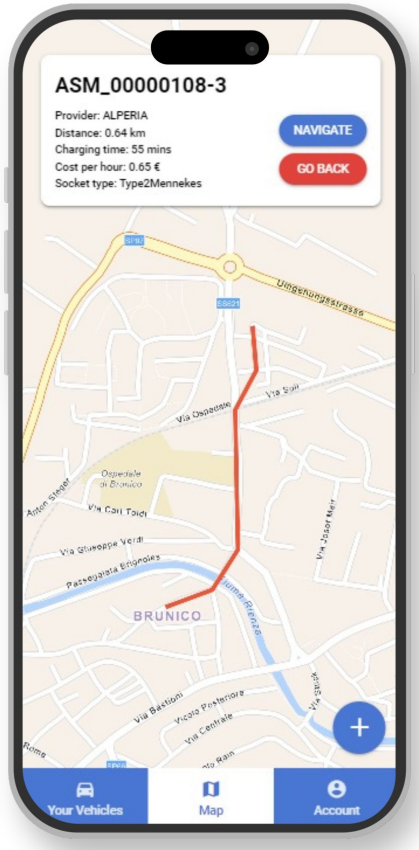


Easy to use

- ➔ **Electric Vehicle Model**
  Insert your **car** model, **current** and **desired** charge.
- ➔ **Insert your destination**
  Define your desired **location**
- ➔ **Select the sorted stations**
  See which stations are the **best suited** for you!
- ➔ **Based on Open Data Hub APIs**
  Availability may vary **outside Sud-Tyrol** Region

Try yourself:

http://web.powernap.alberto.fun/



Made by devs

for devs.

Three easy endpoints

Three easy endpoints

➔ **get-charging-stations**

Returns a **list of charging stations** around a given point,

Try yourself:

https://powernap.alberto.fun/get-charging-stations


```
"body": [
    {
        "location": [
            11.315262,
            46.49311
        ],
        "rank": 1.7569265237225493,
        "station_id": "BZ_RESIA-2"
    },
    {
        "location": [
            11.325609,
            46.494854
        ],
        "rank": 1.4185265961155342,
        "station_id": "ASM_00000404-1"
    },...
}
```

Three easy endpoints

➔ **get-details-from-station**

Returns a list of charging stations around a given point, using a **weighted algorithm** that creates **rank** calculated on **distance** from the destination point, charging **cost**, **ability to charge** the EV at the of the **desired amount of KWh** and if the **type of plug** matches the one your car has.

Try yourself:

https://powernap.alberto.fun/get-charging-stations


```
{
  "distance": 1.685879423365545,
  "provider": "ALPERIA",
  "plugs": [
    {
      "max_power": 22.125,
      "max_current": 32.0,
      "cost_per_kwh": 0.65,
      "socket_type": "Type2Mennekes"
    }
  ],
  "charging_time": 216.94915254237287,
  "location": {
    "latitude": 11.328178,
    "longitude": 46.482277
  }
}
```

Three easy endpoints

➔ **get-location**

Returns a set of **locations** based on a human-readable location name (e.g. “Via Milano, 5 - Bolzano”) given as a body argument in JSON format

```
{
"address”: “Via Milano, 5 Bolzano”,
 “body": [
      14.5040089,
       41.0914419
    ]
}
```

Try yourself:

https://powernap.alberto.fun/get-location