```
In [45]:
```

```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
import seaborn as sns
%matplotlib inline
%pprint off
#plt.style.use('seaborn')
```

Pretty printing has been turned ON

```
In [46]:
```

```
sns.set_style("ticks")
```

In [52]:

```
df_all = pd.read_csv('data/cleaned.csv')
len(df_all)
```

Out[52]:

605948

In [53]:

```
df_all = df_all.set_index(pd.to_datetime(df_all['localminute']), drop=True)
```

In [54]:

```
df_all = df_all.drop(columns=['Unnamed: 0', 'localminute'])
```

In [55]:

```
display(df_all.head(), len(df_all))
```

	marginal_change	cumul_value	meterid
localminute			
2015-10-01 05:00:00	0.0	93470.0	35
2015-10-01 06:00:00	0.0	93470.0	35
2015-10-01 07:00:00	0.0	93470.0	35
2015-10-01 08:00:00	0.0	93470.0	35
2015-10-01 09:00:00	0.0	93470.0	35

605948

In [56]:

```
groups = df_all.groupby('meterid')
keys = groups.groups.keys() # keys: an iterable of dataids or meter ids
```

In [57]:

id_list = list(keys)
display(id_list, len(id_list))

11/3/2019 [35, 44, 77, 94, 114, 187, 222, 252, 370, 483, 484, 661, 739, 744, 871, 1042, 1086, 1103, 1185, 1283, 1403, 1415, 1507, 1556, 1589, 1619, 1697, 1714, 1718, 1790, 1791, 1792, 1800, 1801, 2018, 2034, 2072, 2094, 2129, 2233, 2335,

2378, 2449, 2461,

2470, 2575, 2638,

2645, 2755, 2814,

2818, 2945, 2946,

2965, 2980, 3036,

3039, 3134, 3310,

3367, 3527, 3544,

3577,

3635,

3723,

3778,

3849,

3893,

3918,

4029,

4031,

4193,

4228,

4296,

4352,

4356,

4373,

4421,

4447,

4514,

4671,

4732,

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5972,

6101,

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6505,

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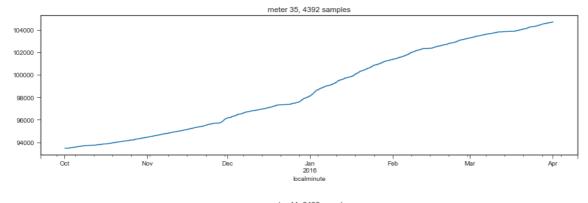
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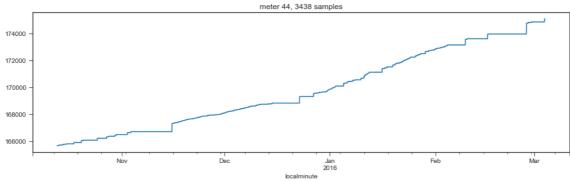
9982]

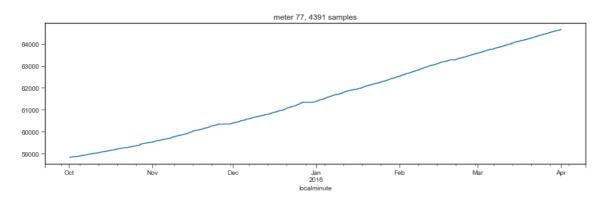
157

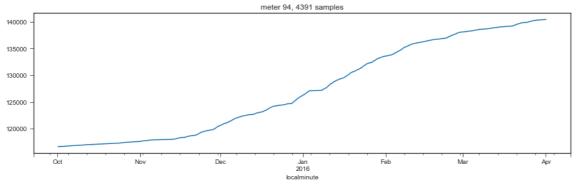
In [58]:

```
for i in id_list:
    df_i = groups.get_group(i)
    plt.cla()
    df_i['cumul_value'].plot(figsize=(15,4), title=f'meter {i}, {len(df_i)} samples')
    plt.show()
```

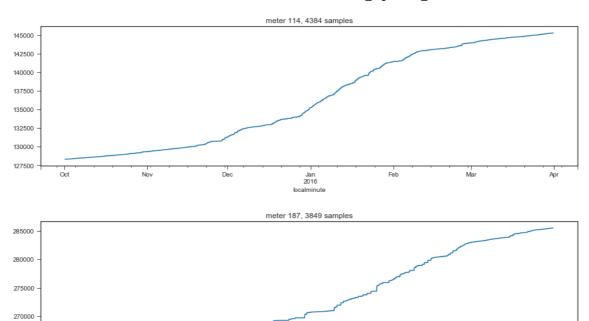


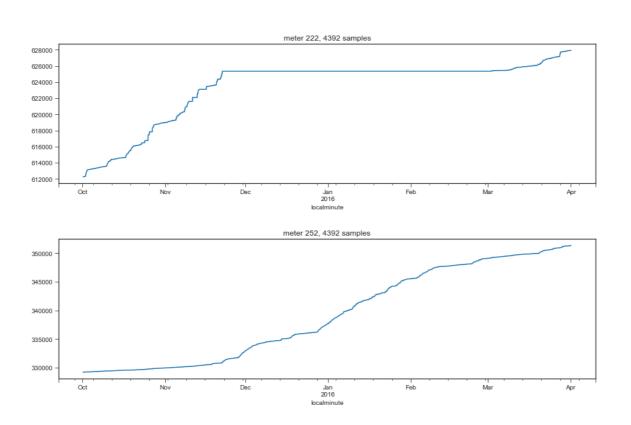


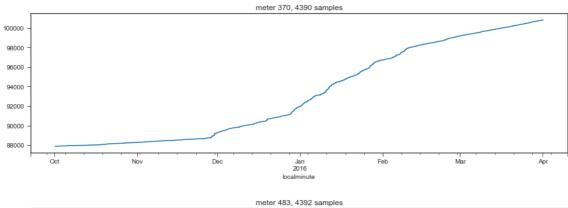


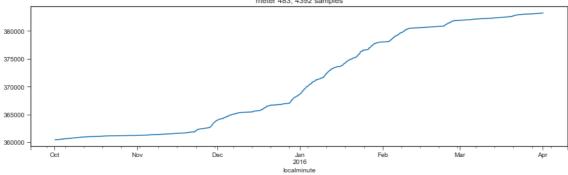


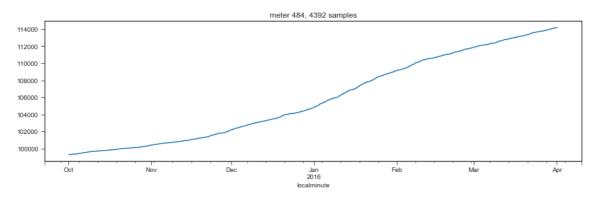
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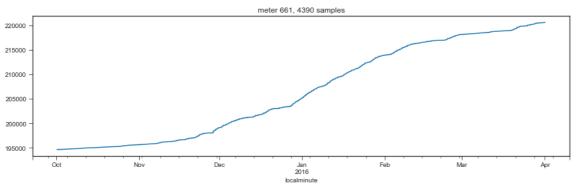








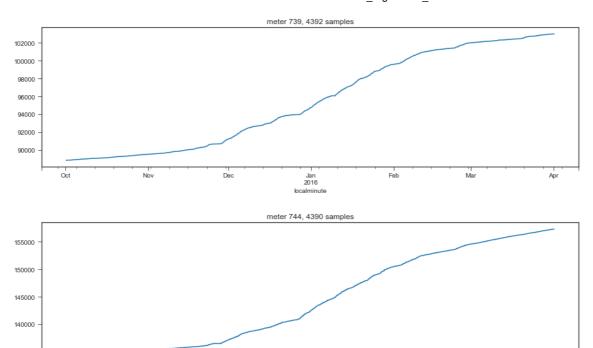


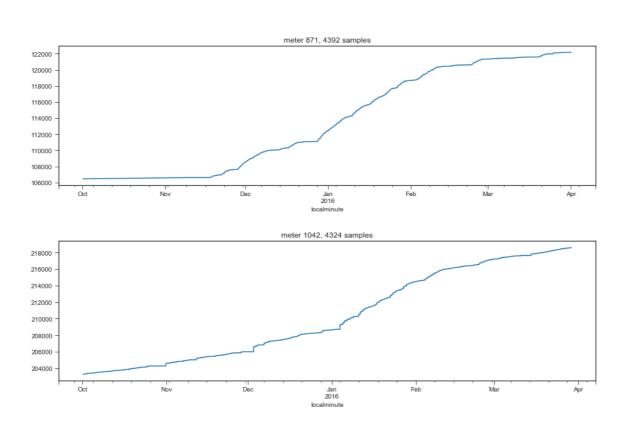


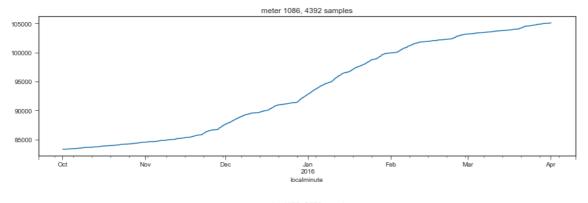
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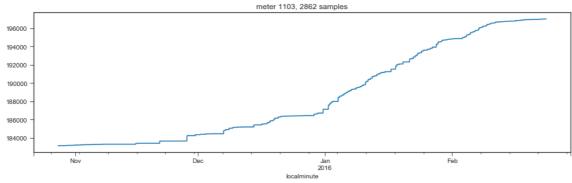
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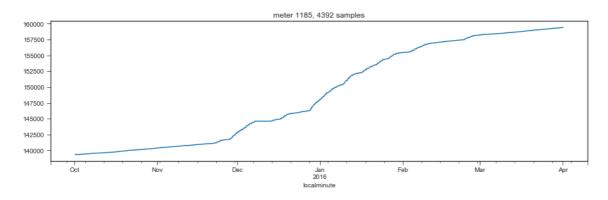
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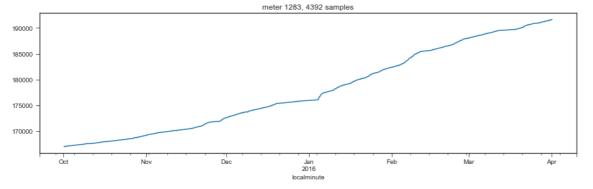


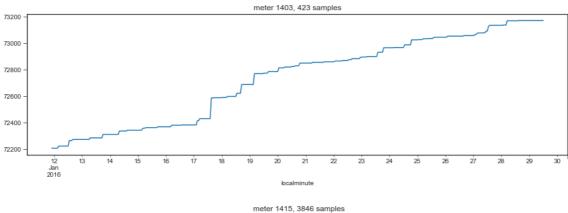


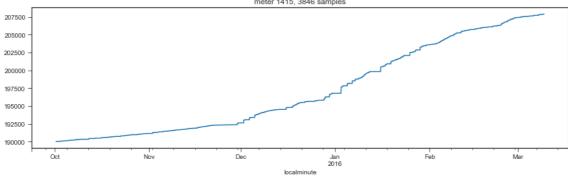


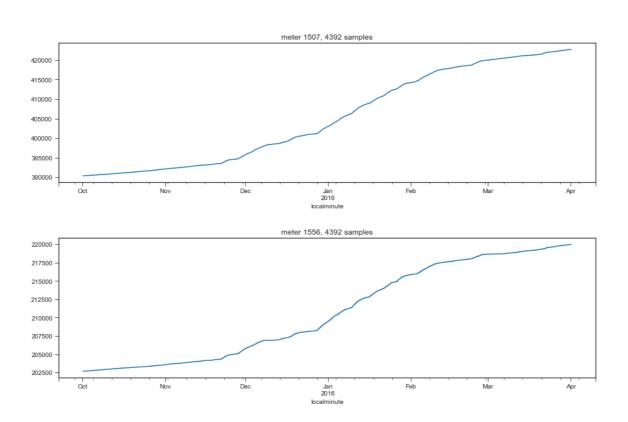


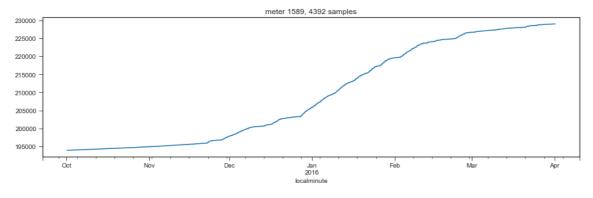


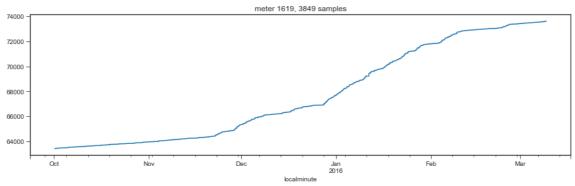


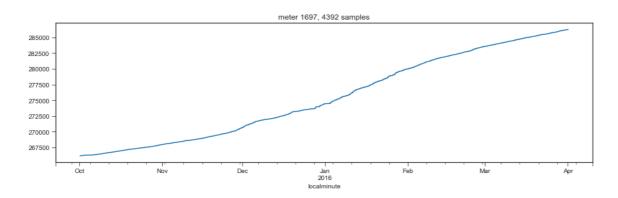


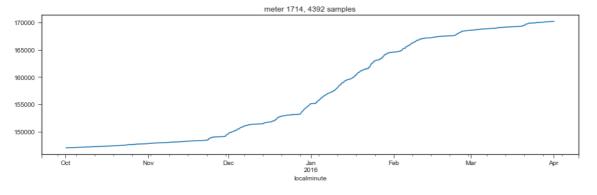


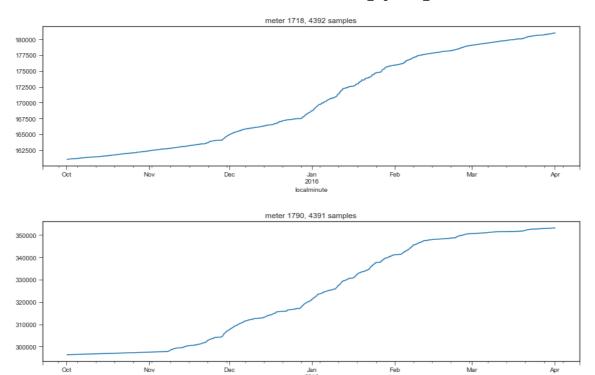


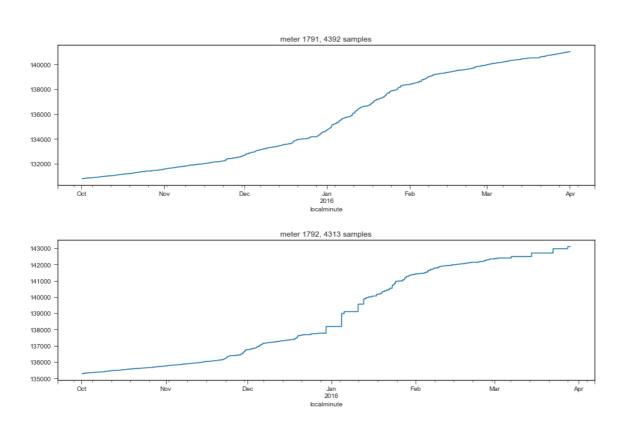


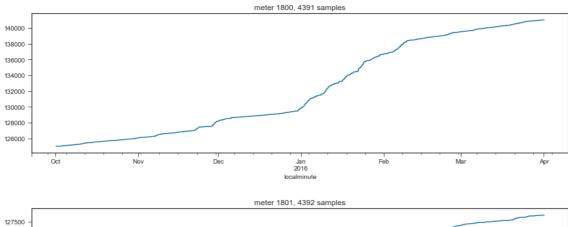


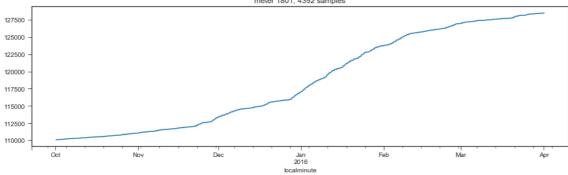


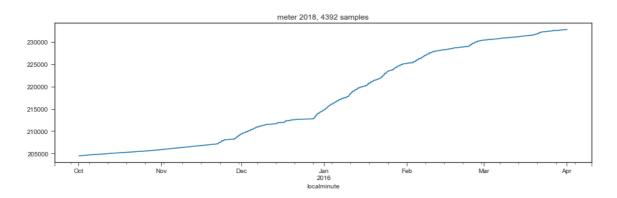


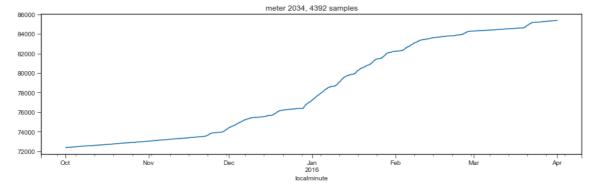


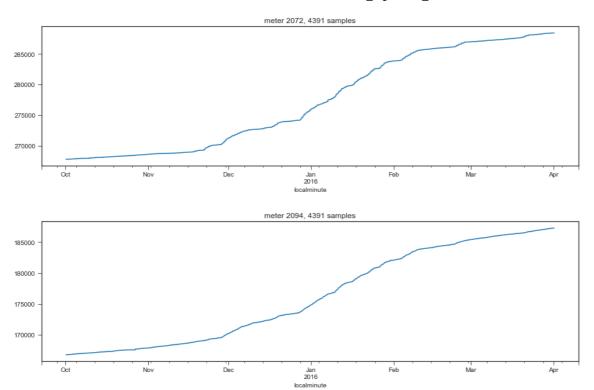


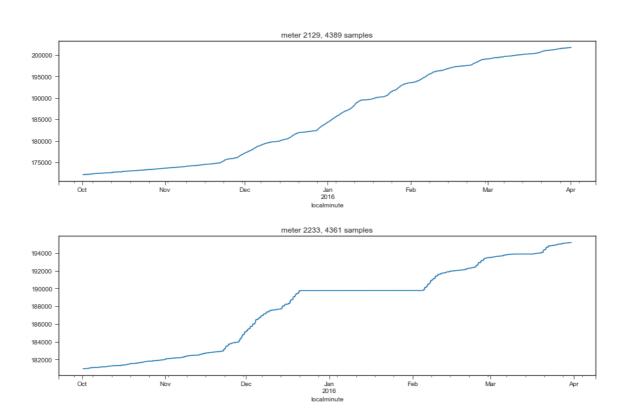


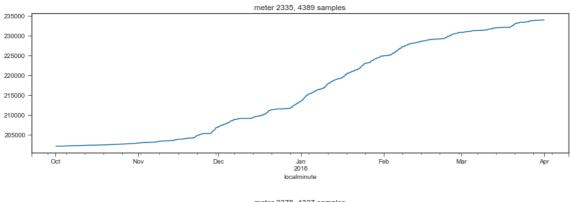


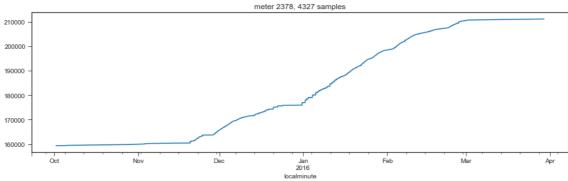


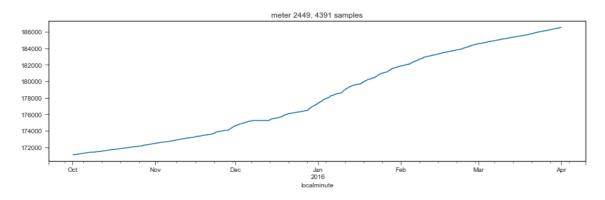


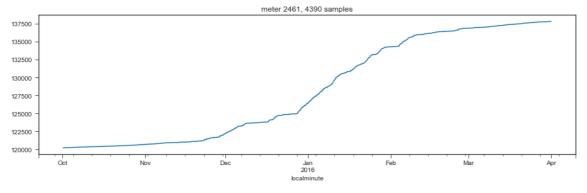


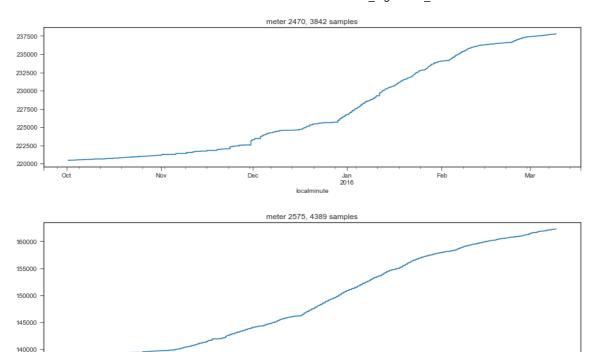


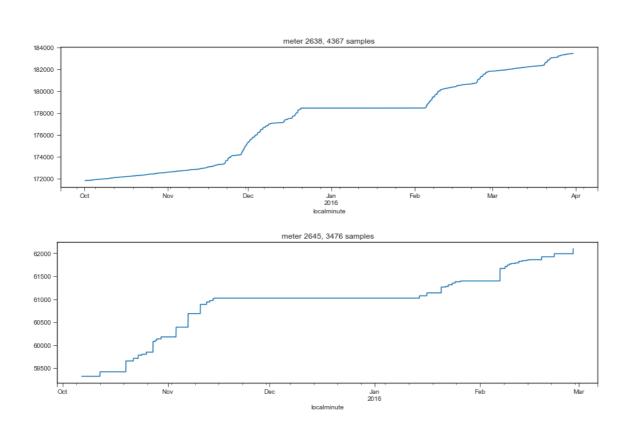


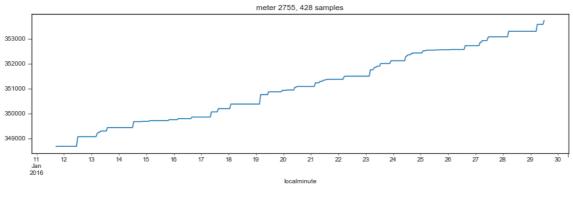


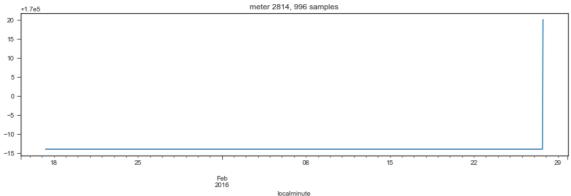


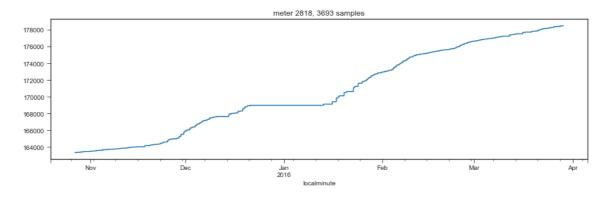


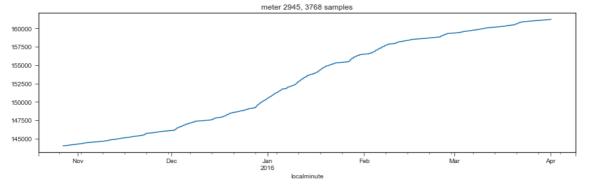


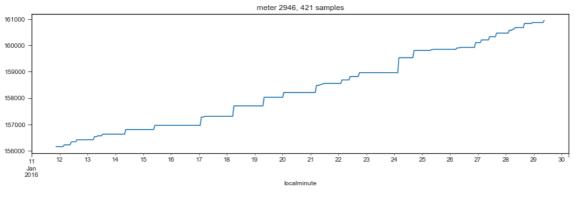


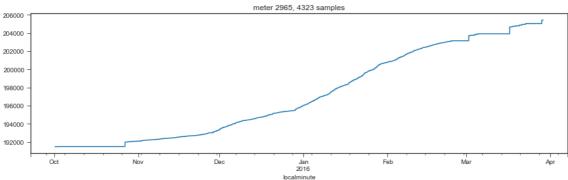


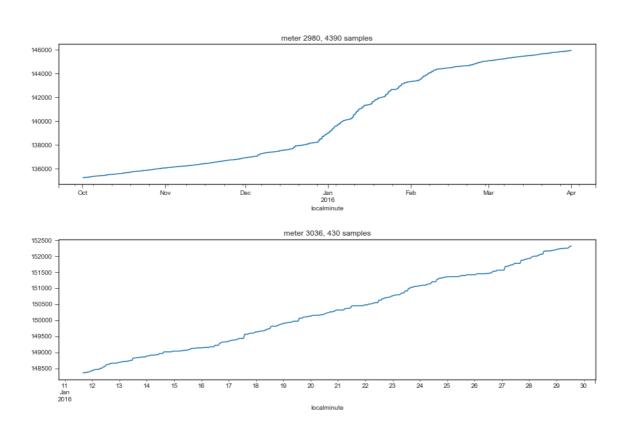


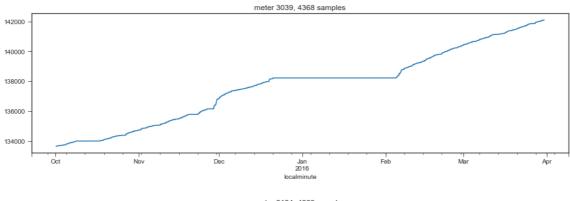


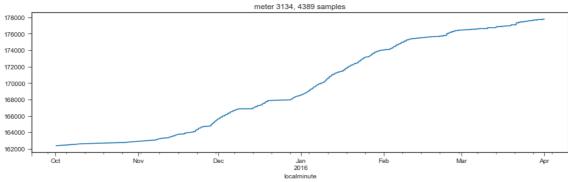


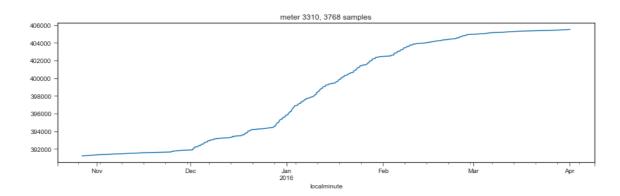


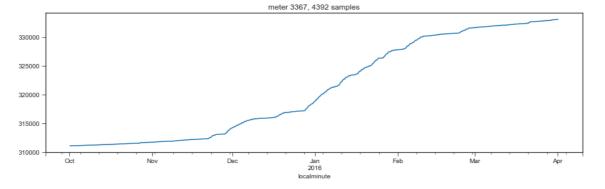


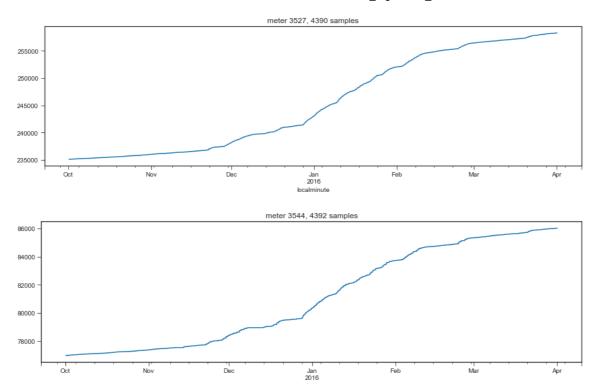


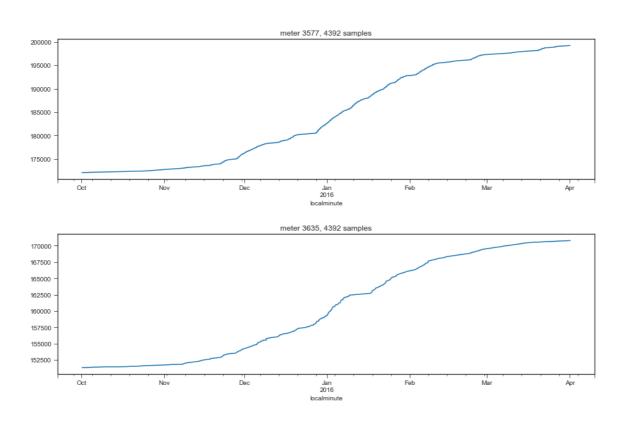


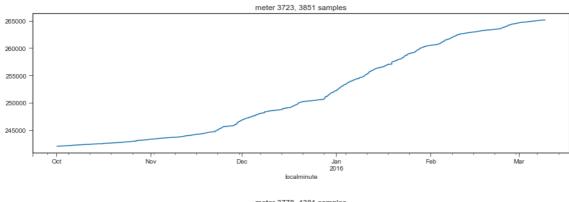


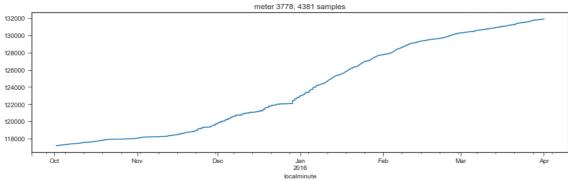


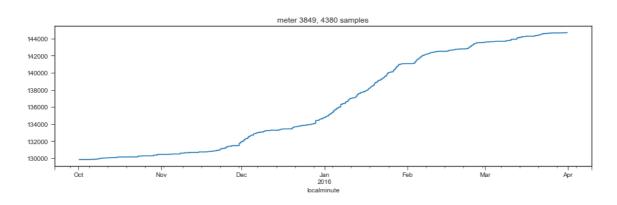


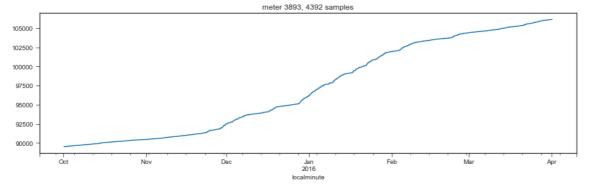


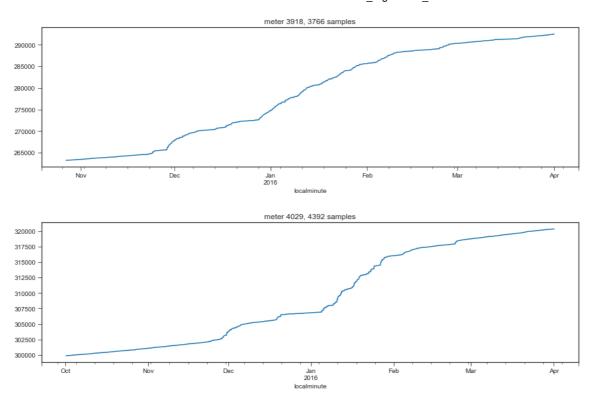


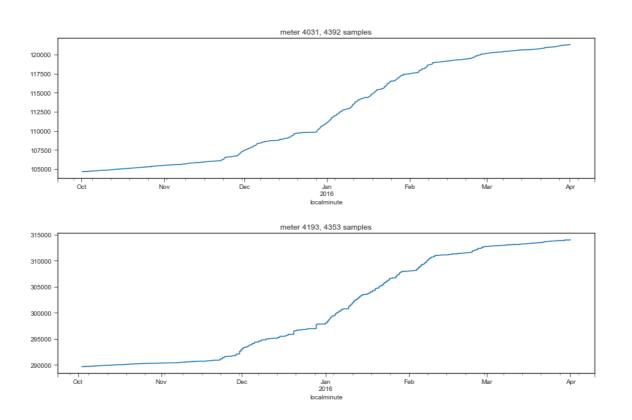


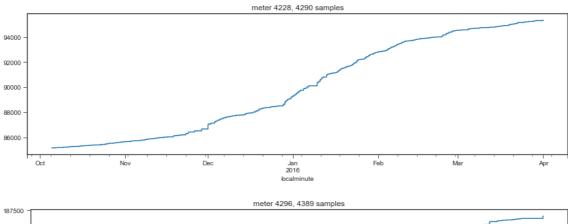


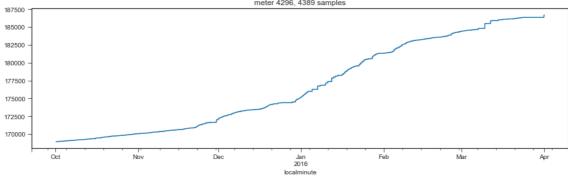


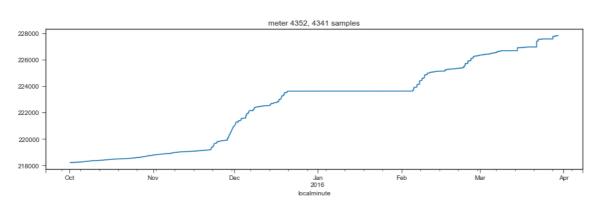


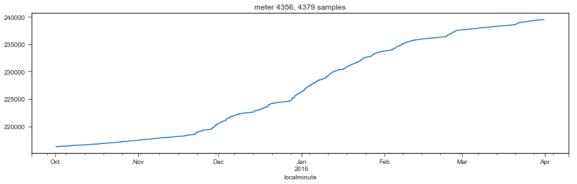










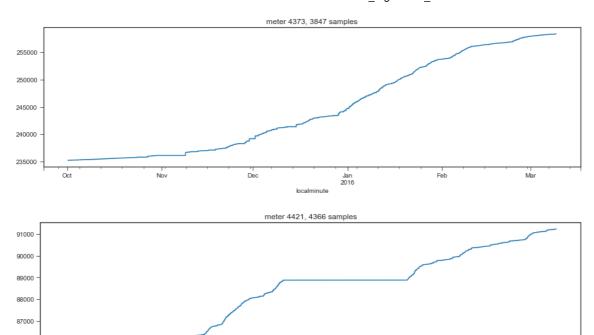


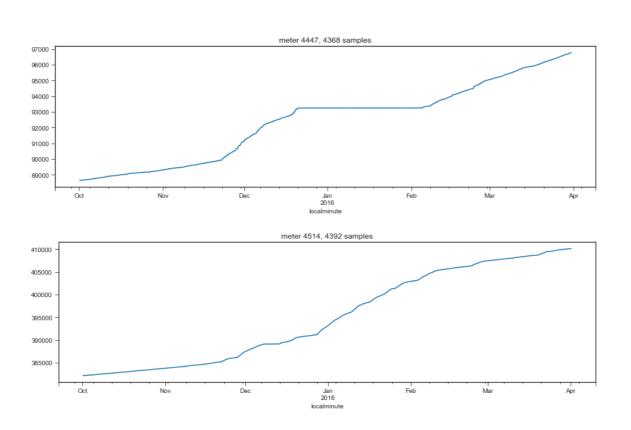
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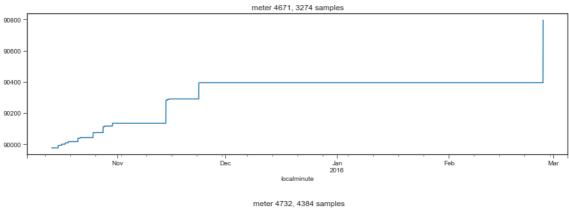
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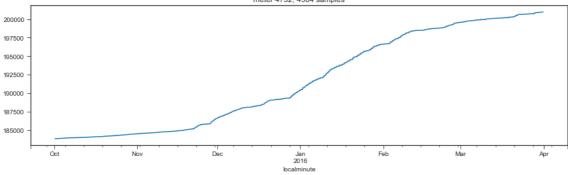
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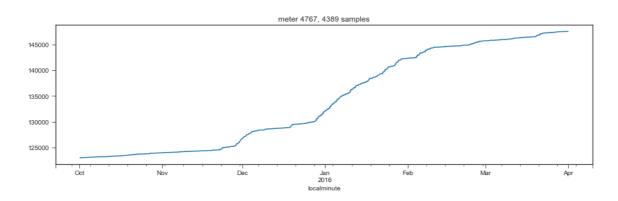
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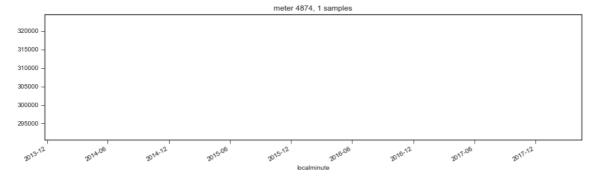


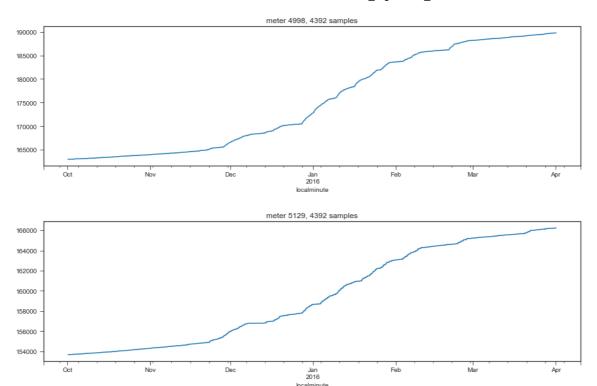


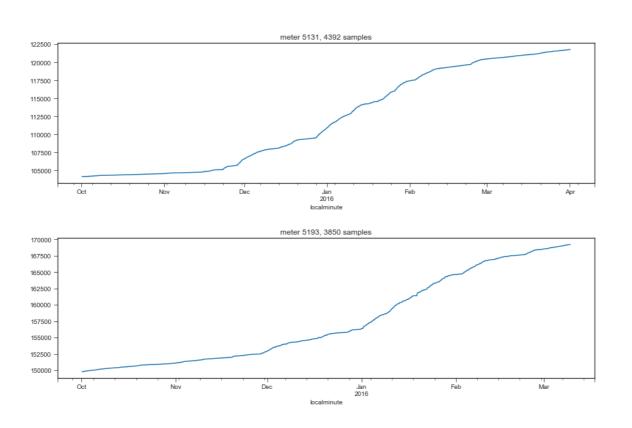


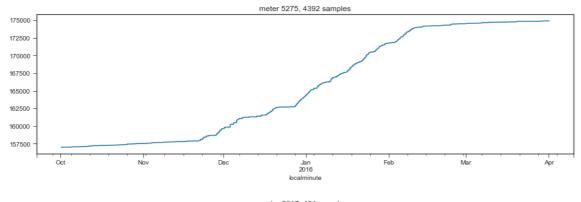


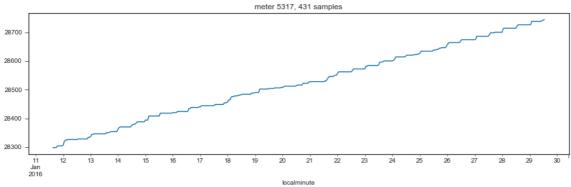


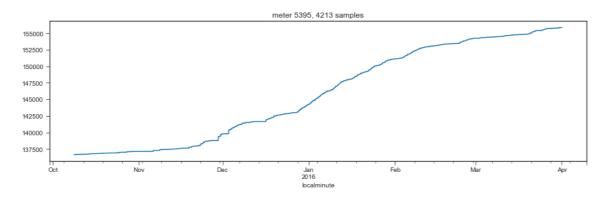


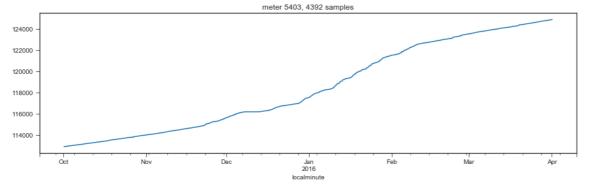


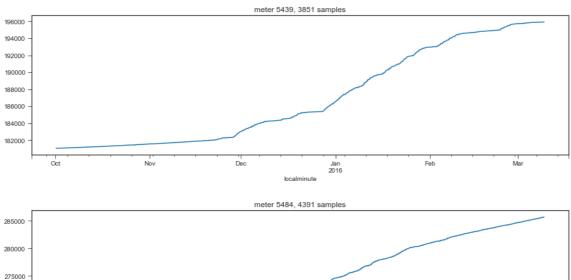


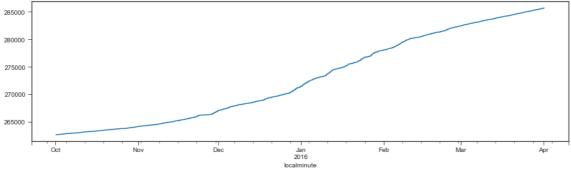


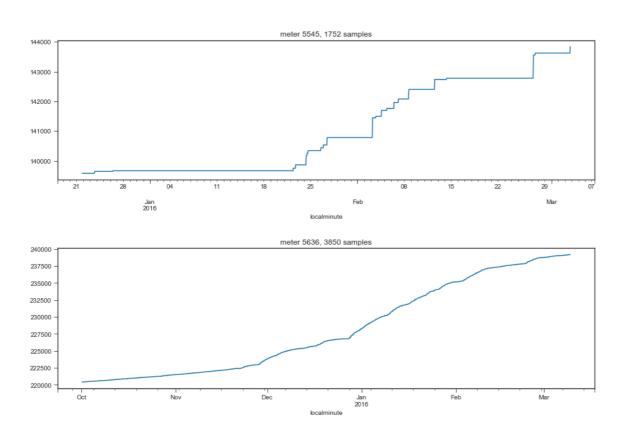


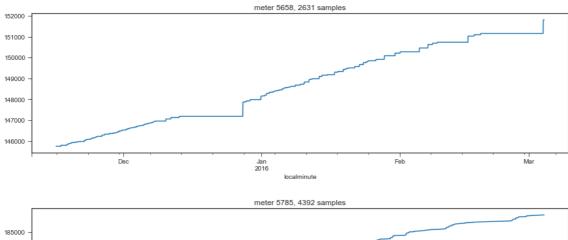


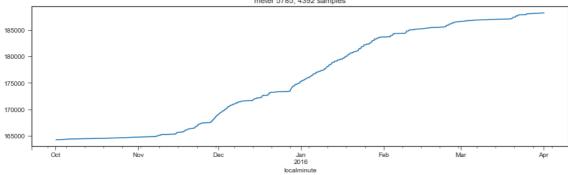


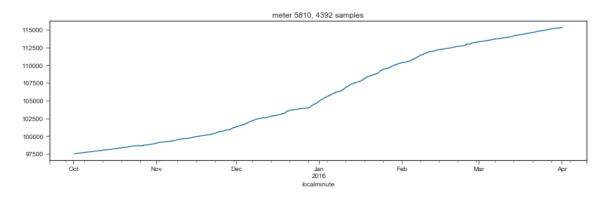


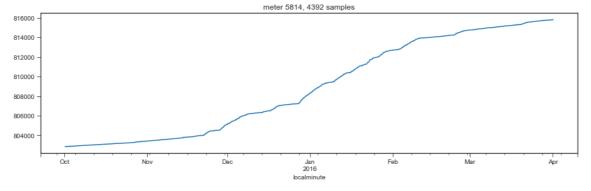


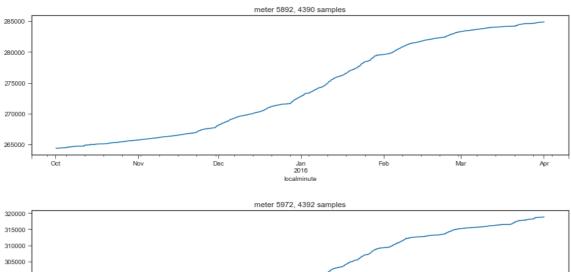


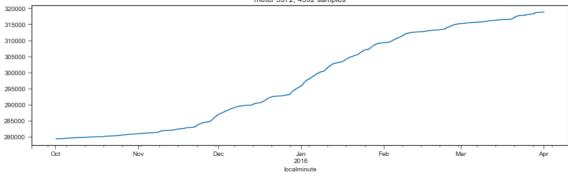


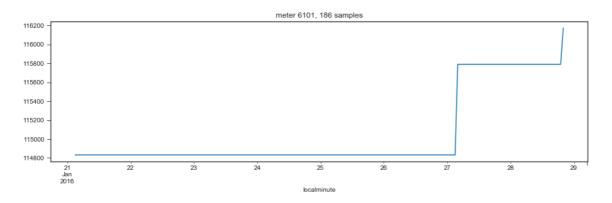


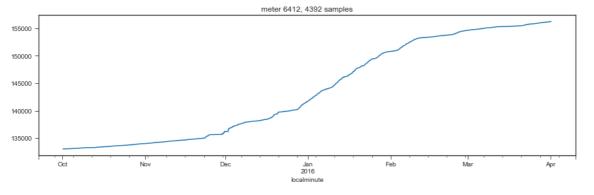


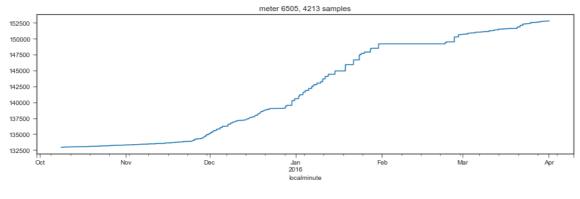


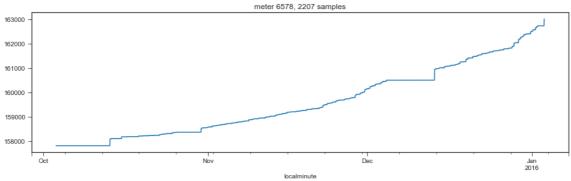


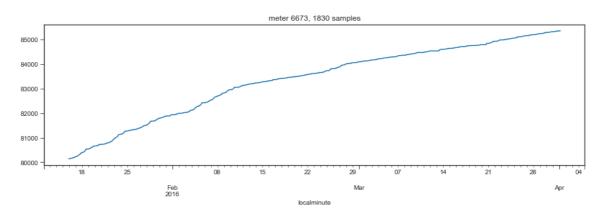


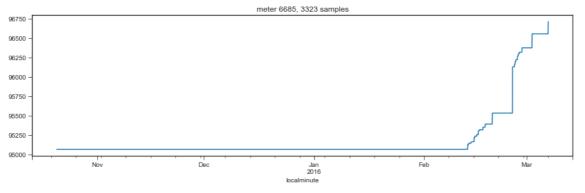


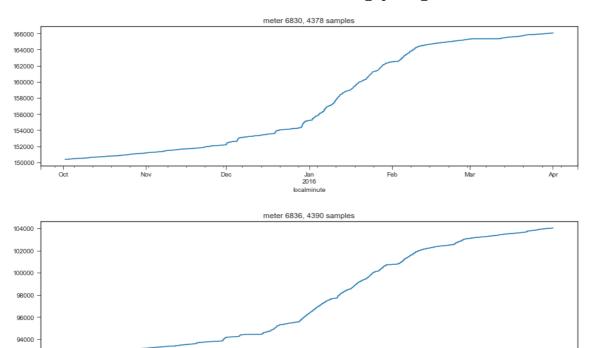


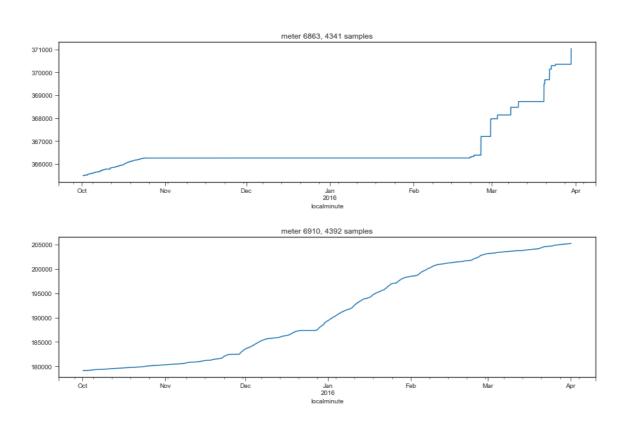


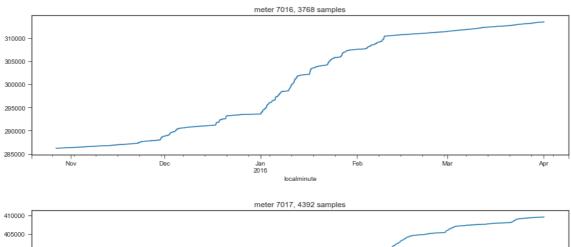


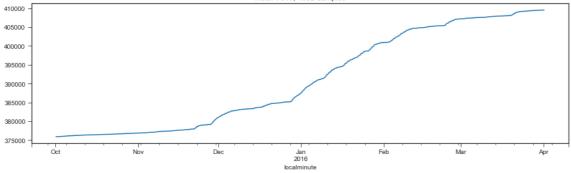


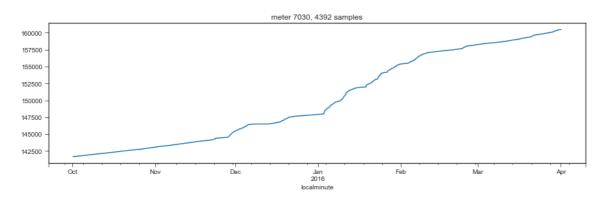


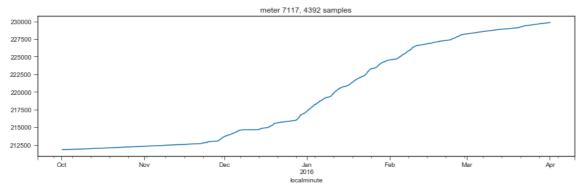




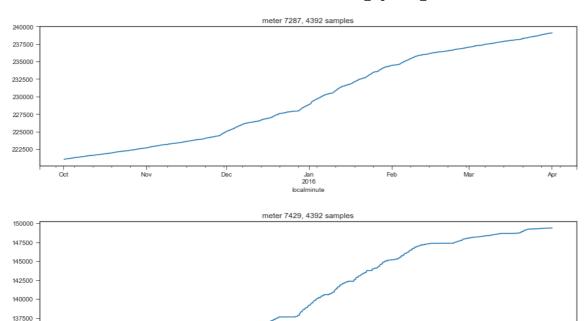


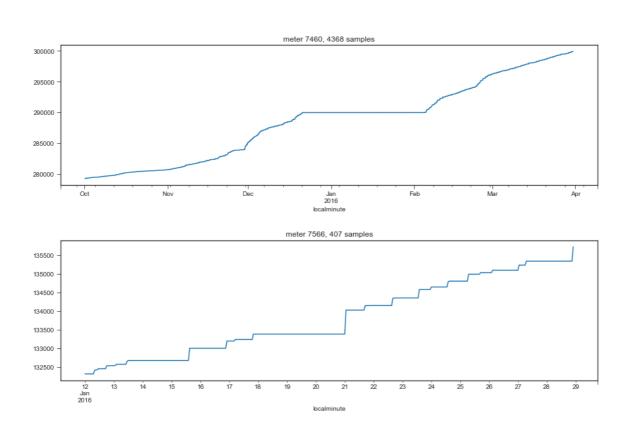


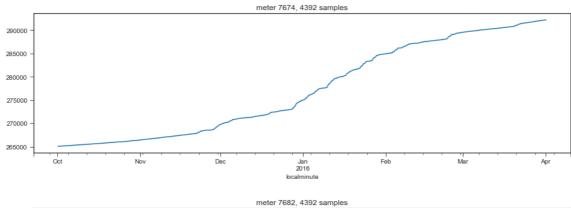


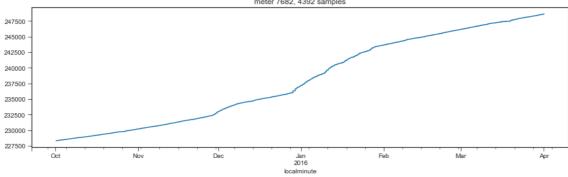


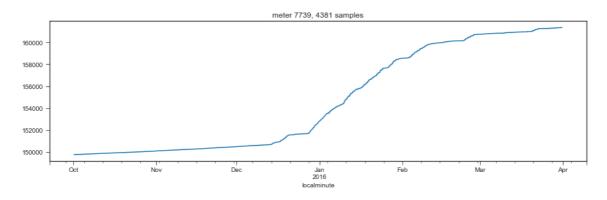
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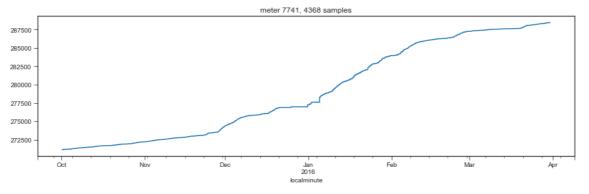


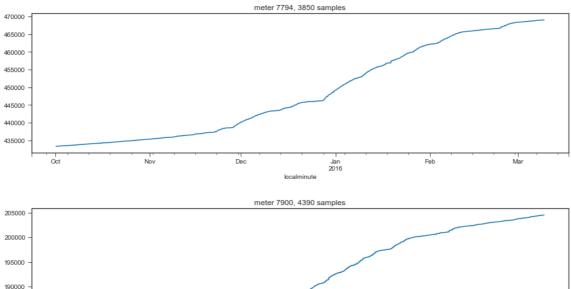


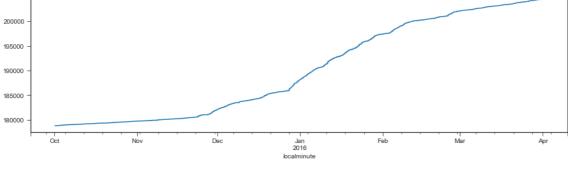


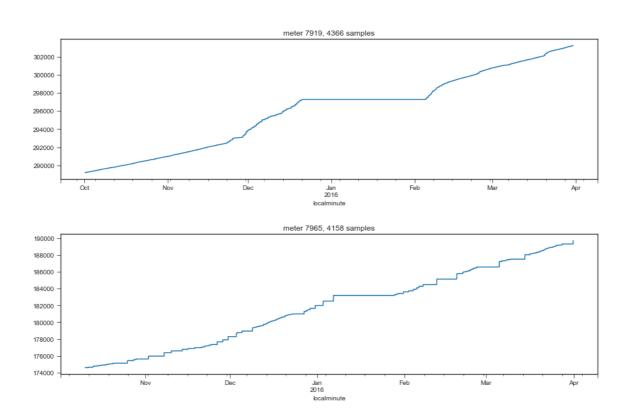


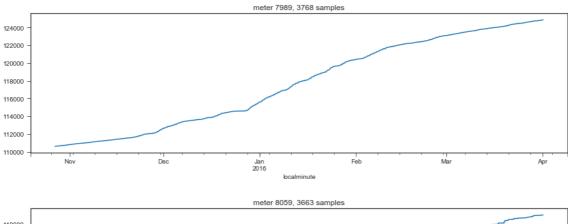


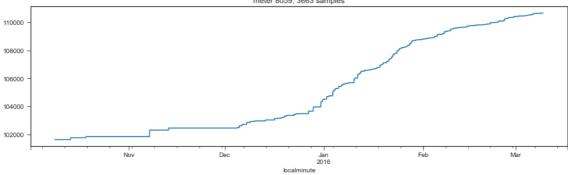


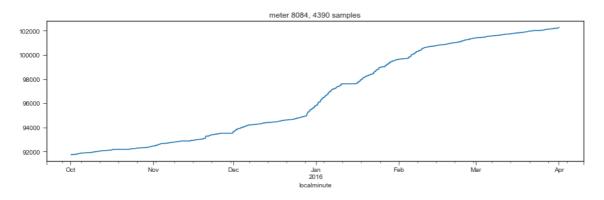


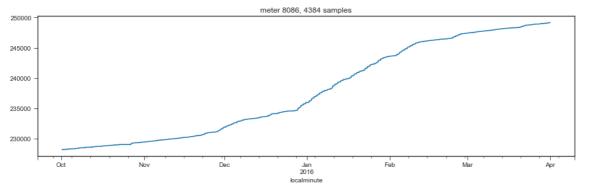


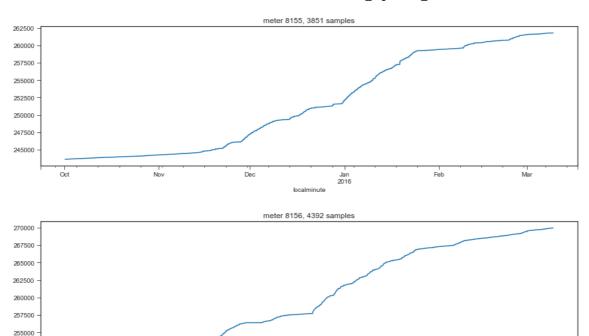






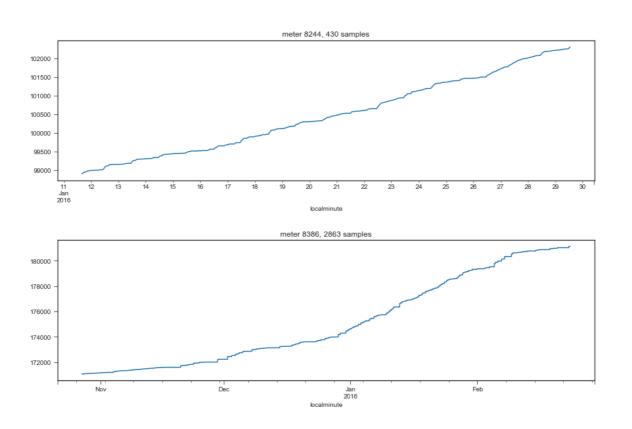






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