

```
In [ ]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
sns.set_palette("viridis")

df = pd.read_csv('../data/nsw/merged.csv')
df.datetime = df.datetime.astype('datetime64')
dt = df['datetime'].dt
df['year'] = dt.year
df['month'] = dt.month
df['day'] = dt.day
df['hour'] = dt.hour
df['minute'] = dt.minute
df['day_of_week'] = dt.day_of_week
df['week'] = dt.isocalendar().week
df['week_of_month'] = (dt.day - 1) // 7 # day of month - 1 (0-30) // 7
df.head()
```

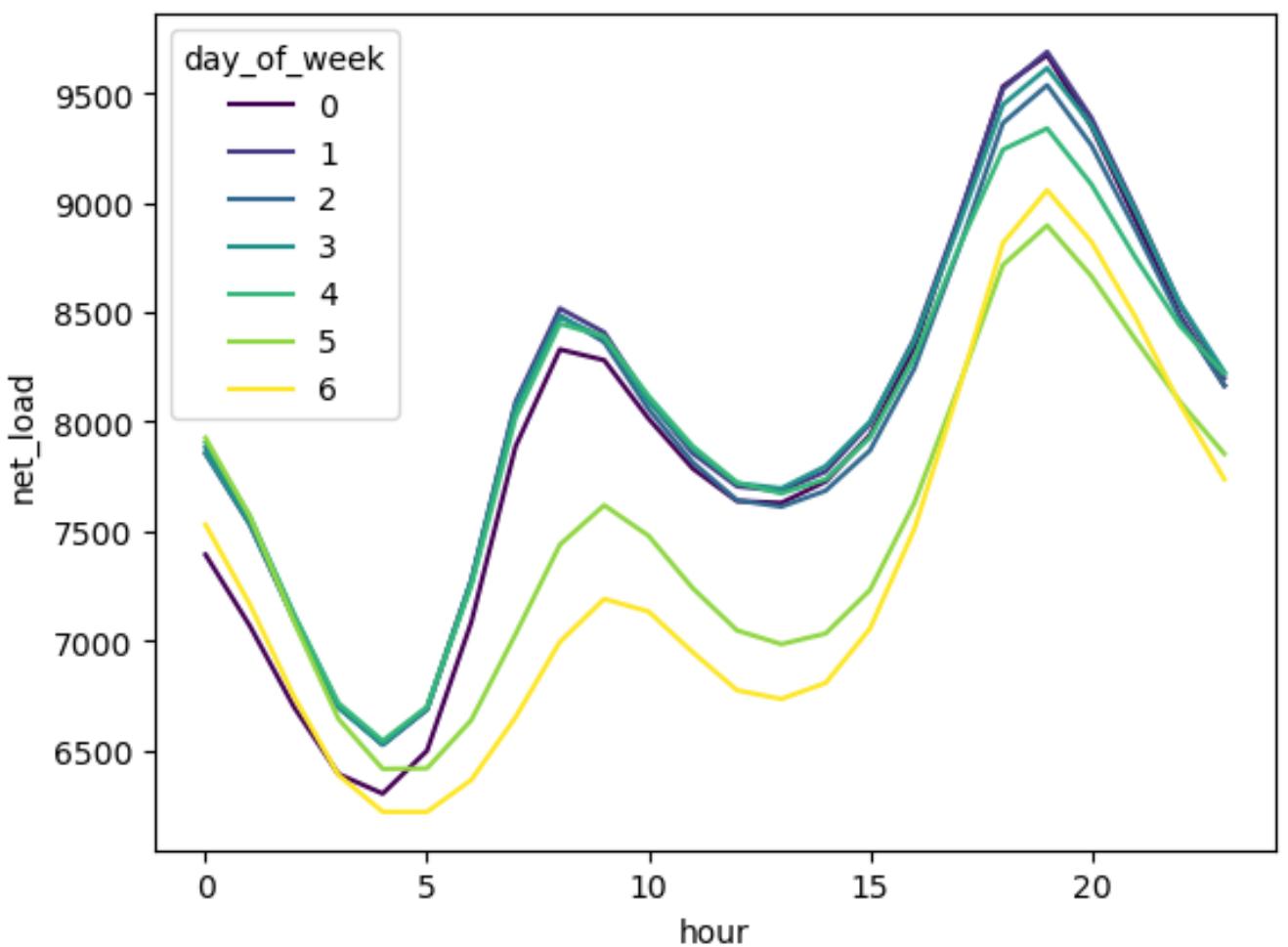
Out[]:

	datetime	net_load	total_load	pv_est	tempc_cbr	cloud8_cbr	windk_cbr	w
0	2018-03-06 10:00:00	8499.5	8332.145	434.3715	19.0	2.0	15.0	
1	2018-03-06 11:00:00	8457.0	8294.325	468.8860	19.4	1.0	14.0	
2	2018-03-06 12:00:00	8396.0	8248.405	483.1315	19.1	4.0	15.0	
3	2018-03-06 13:00:00	8341.5	8193.080	491.4175	19.4	4.0	14.0	
4	2018-03-06 14:00:00	8321.5	8185.100	487.9780	18.9	7.0	17.0	

5 rows × 26 columns

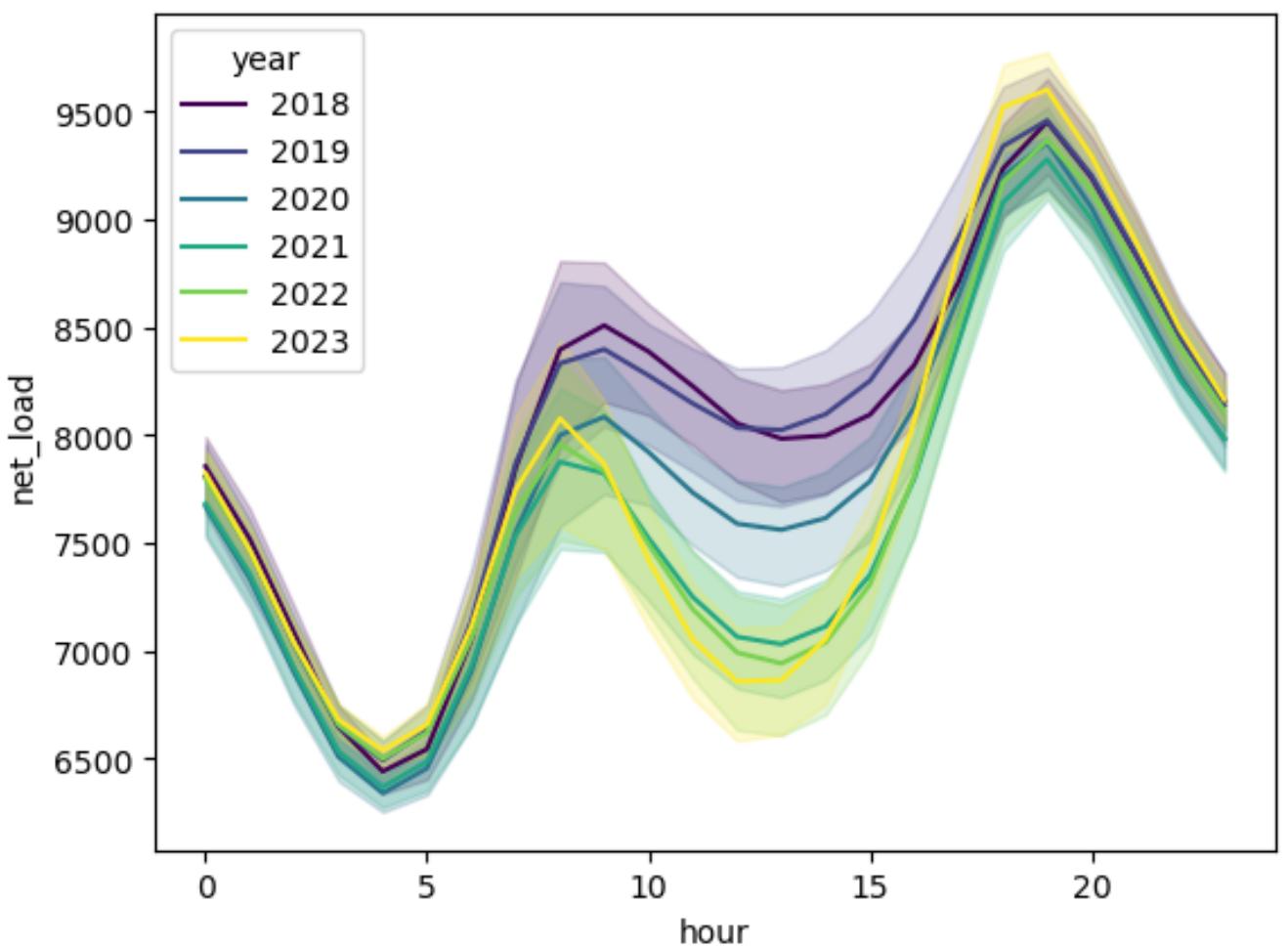
```
In [ ]: grouped_dow = df.groupby(['day_of_week', 'hour', 'minute'])[['net_load']]
sns.lineplot(x='hour', y='net_load', data=grouped_dow, hue='day_of_week',
             palette=sns.color_palette('viridis', as_cmap=True))
```

Out[]: <Axes: xlabel='hour', ylabel='net_load'>



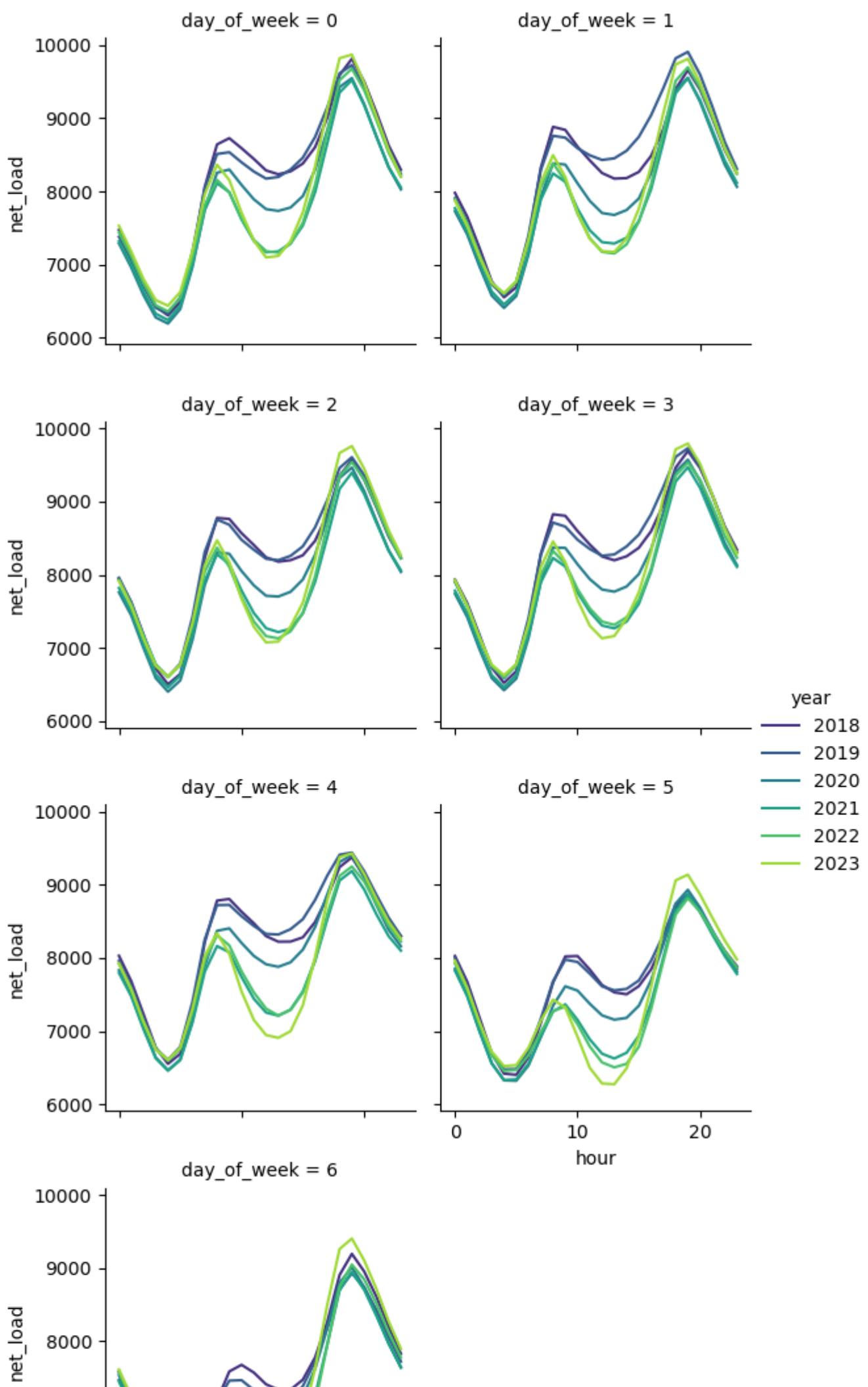
```
In [ ]: grouped_year_dow = df.groupby(['year', 'day_of_week', 'hour', 'minute'])
sns.lineplot(x='hour', y='net_load', data=grouped_year_dow, hue='year')
```

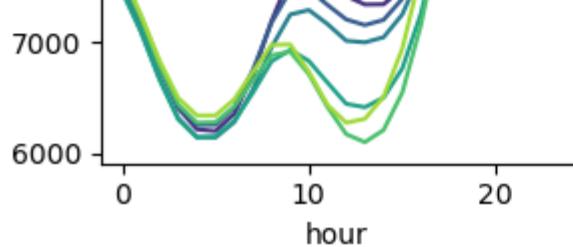
```
Out[ ]: <Axes: xlabel='hour', ylabel='net_load'>
```



```
In [ ]: g = sns.FacetGrid(grouped_year_dow.reset_index(), col='day_of_week', col_wrap=3, hue='year', palette='viridis')
g.map(sns.lineplot, 'hour', 'net_load')
g.add_legend()
```

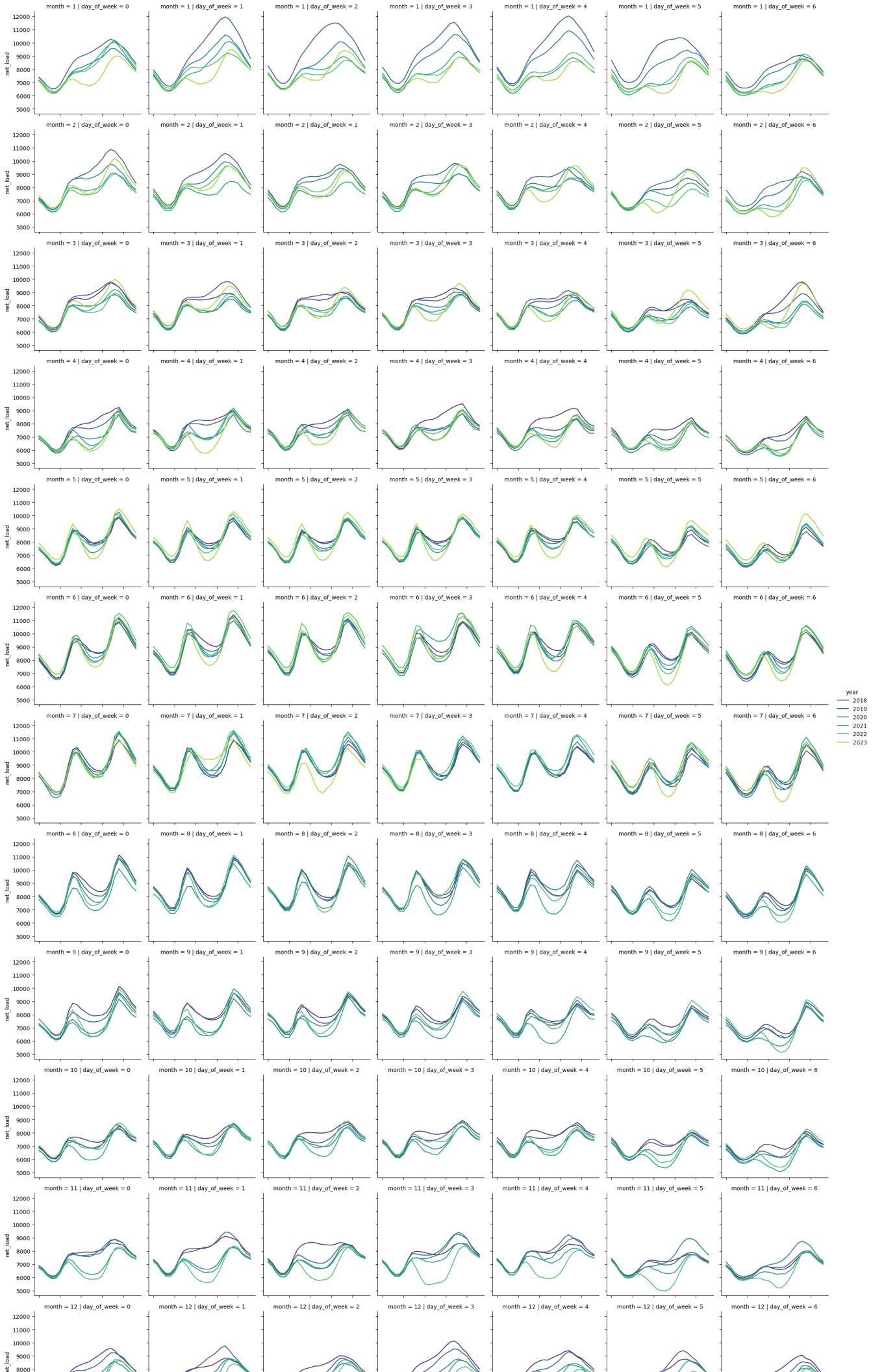
```
Out[ ]: <seaborn.axisgrid.FacetGrid at 0x7fc407b90c10>
```

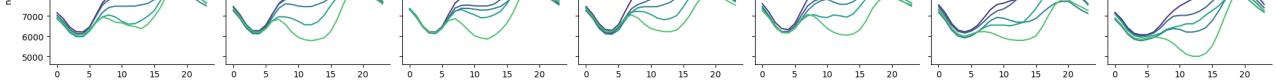




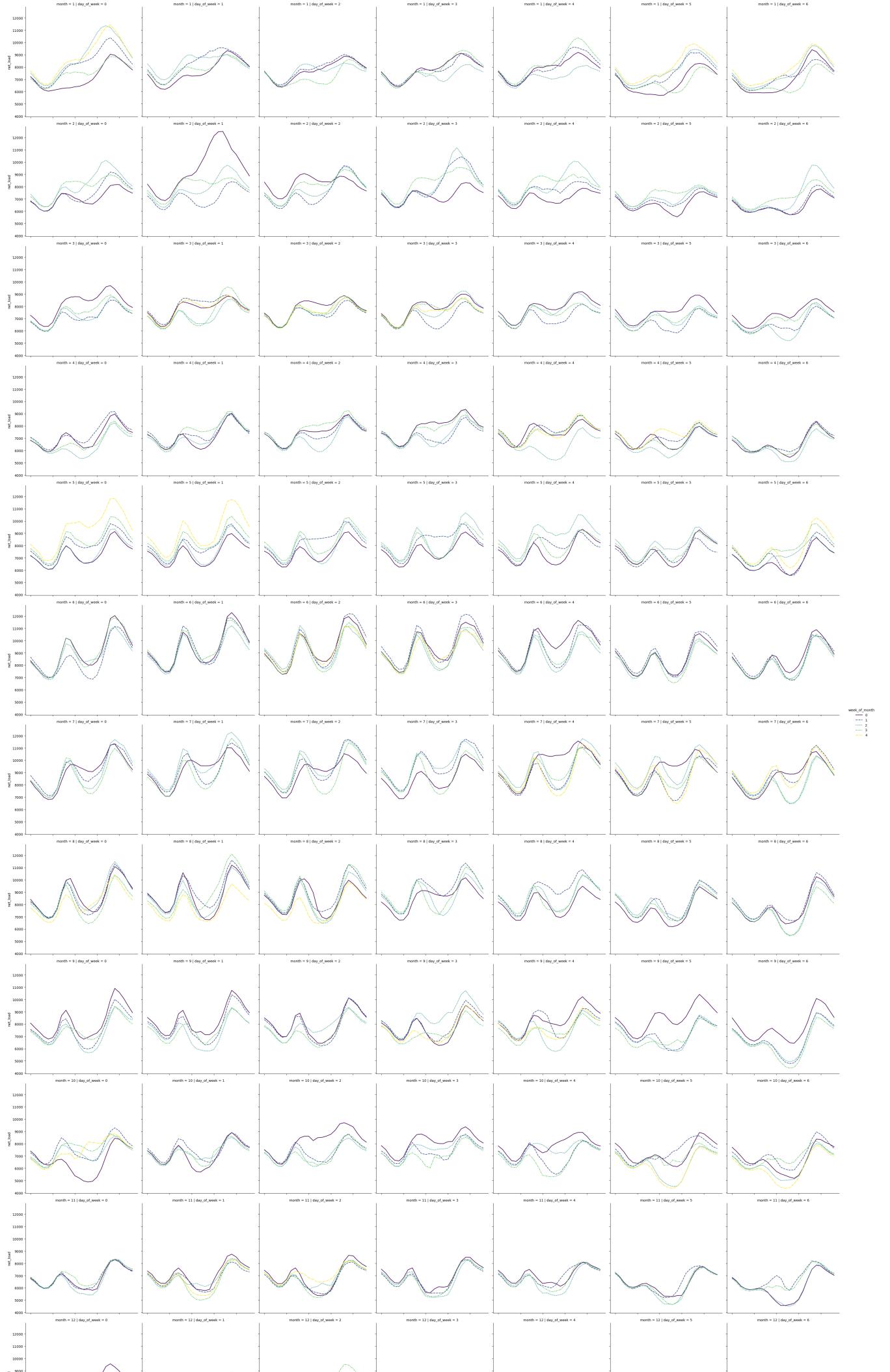
```
In [ ]: grouped_year_month_dow = df.groupby(['year', 'month', 'day_of_week', 'hour'])
g = sns.FacetGrid(grouped_year_month_dow.reset_index(), row='month', col='day_of_week',
                   hue='year', palette='viridis')
g.map(sns.lineplot, 'hour', 'net_load')
g.add_legend()
```

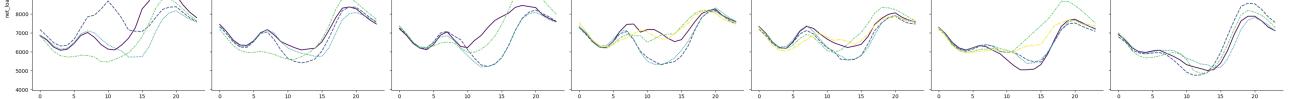
```
Out[ ]: <seaborn.axisgrid.FacetGrid at 0x7fc40885e910>
```





```
In [ ]: grouped_month_week_dow = df[df.year == 2022].groupby(['year', 'month',  
g = sns.relplot(  
    data=grouped_month_week_dow.reset_index(), x='hour', y='net_load',  
    row='month', col='day_of_week', kind='line', errorbar=None,  
    hue='week_of_month', style='week_of_month', palette='viridis', legend=False)
```





```
In [ ]: grouped_year_week_dow = df.groupby(['year', 'week', 'day_of_week', 'hour']).mean()
g = sns.relplot()
grouped_year_week_dow.reset_index(), x='hour', y='net_load', row='week',
hue='year', palette='viridis', style='year', kind='line', legend='full')
```

