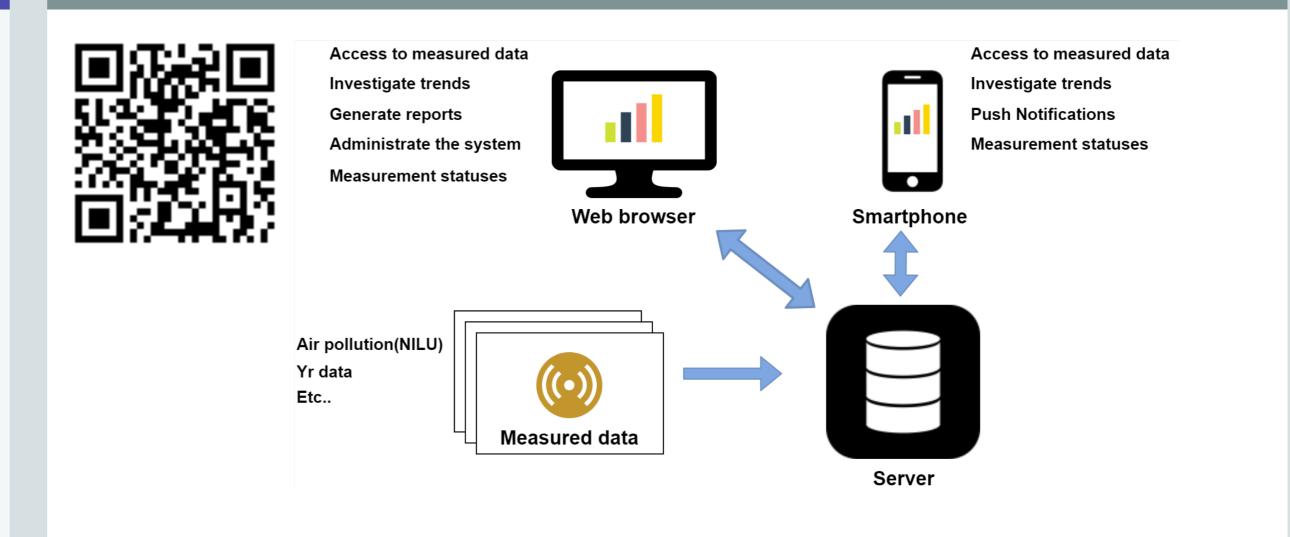


# **Environmental Public Health Information Management System**

The system is gathering, acquiring and analysing environmental public health data for Porsgrunn municipality, which is represented in a website and a mobile app.

The website can be found at environmentalpublichealth.azurewebsites.net or by scanning the QR-code.



# Background

It is important for the government and companies to take measures for reducing emissions both locally and globally. The decision makers, for instance the government, need to be provided with good information regarding the topic. Citizens may also be interested in everyday pollution in their local environment, which for example will be helpful for asthmatic people who want to stay inside on days with problematic pollution levels. Today there are a lot of environmental data available, but they are typically spread around on different websites. By gathering available data into one solution, it would be easier to get an overview and read the available data. Therefore, USN has collaborated with Tel-Tek, Porsgrunn municipality and Telemark hospital-Department of Occupational Medicin to develop a prototype to make environmental data publicly available at Grenland area.

# Dashboard

The most important information is displayed in the dashboard page, which act as the home page for the website. Each plot display the last day historical data for a source and corresponding parameters with associated measurements. The sources have a status field indicating the health of the measurements. In terms of air pollution this status will tell the users how polluted the air is, for

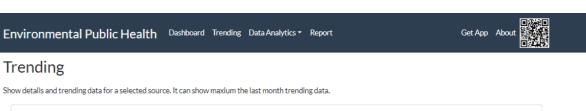
# **Trending/Details**

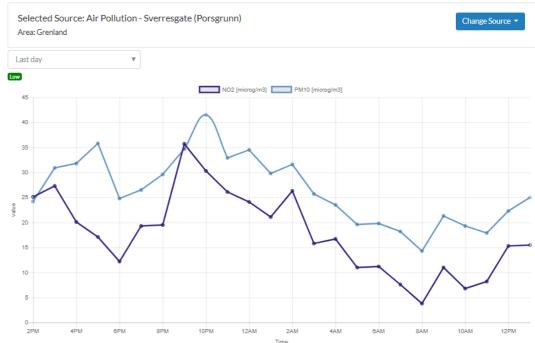
A dedicated trending/details page was made to give more information about the sources and associated parameters. The plot is made bigger, and unlike in the dashboard page, it is possible to select fixed time periods for the last historical data.

To solve the problem a website and a mobile app was made to display different pollution data. The system is designed to automatically gather data from external sources, but currently only air pollution data from NILU(Norwegian Institute for Air Research) is used.

### instance "low", which indicates low air pollution.







Source - Details					
Parameter	Unit	Last Value	Status	Status Intervals	
[ <u>NO2</u> ]	microg/m3	15.5	Low	Low [-5-100]	
				[Medium] [100-200]	
				[High] [200-400]	
				Very High [400-9999999]	

### **Analytic functionality**

Environmental Public Health Dashboard Trending Data Analytics • Repor

This tool will be helpful for comparing periods. For example, different weeks can be compared against each other. The same o

Data Analytics - Compare Periods

Choose sources and parameters

Select Source

Further analysis of the data within the system is possible by a page that allow parameters to be freely chosen at any time period, and then combined into one large plot. It is also possible to compare time periods by week, month and year. This allow different time periods from the same parameter to be compared.

Get App About

### **Report Generation**

It is possible to generate reports based on selected years and sources. The reports are intended to be printed or saved as pdf files and used as base for taking measures for reducing emissions and improve the environment.

#### Environmental Public Health Report Document

Generated: 05/13/2018	
About the report:	

Contain statistic and history data. All measurements within one month is combined, were the average value is used for plotting

Sources included in this report:

	B	Provident and

# **Android App**

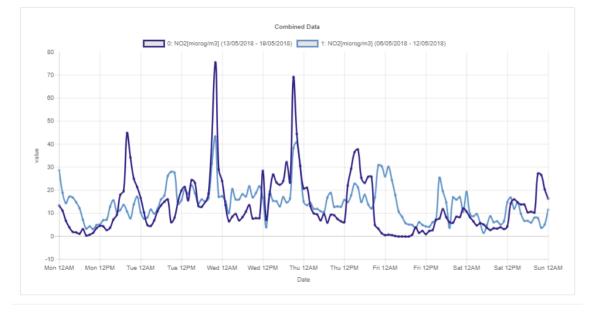
An Android app was made mainly to allow push notifications when source statuses changes, which eliminate the need of checking the website to detect pollutions like air pollution. The users can subscribe/unsubscribe on the sources they feel is relevant.

The mobile app provide dashboard and trending/details functionality like the website.

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≡ Dashboard	$\equiv$ Trending	≡	Trending
Sverresgate (Porsgrunn) - Air Pollution Status: Low	Lensmannsdale Pollution	n (Skien) - Air High:	in: [100-200] [200-400] ligh: [400-9999999]

Air Pollution - Sverresgate (Porsgrunn)		Line Id	Parameter	Time Period	Options
Select Parameter		0	[NO2] Air Pollution - Sverresgate (Porsgrunn)	2018-20	Remove
NO2	•				_
Time period span		1	[NO2] Air Pollution - Sverresgate (Porsgrunn)	2018-19	Remove
Week					
Month					
<ul> <li>Year</li> </ul>					
Select time period					
2018-19					
Add					

Selected Parameters

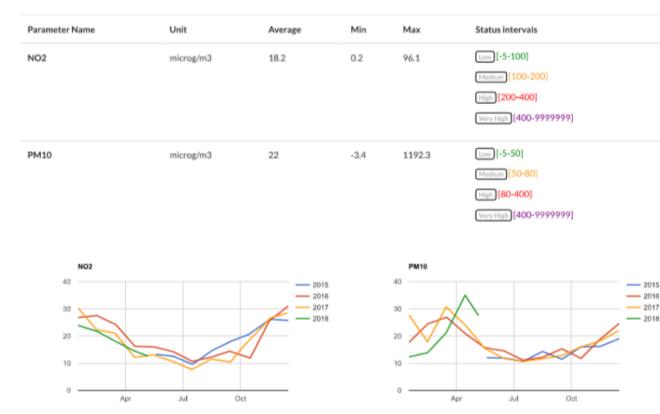


environmentalpublichealth.azurewebsites.net

source name	Area	Parameters	Period
Air Pollution	Sverresgate (Porsgrunn) - Grenland	[NO2] [PM10]	2015 - 2018
Air Pollution	Lensmannsdalen (Skien) - Grenland	[NO2] [PM10] [PM2.5]	2015 - 2018

#### Source name: Sverresgate (Porsgrunn) - Air Pollution

Statistics about the source parameters:





Porsgrunn kommune

### Tel-Tek

Sykehuset Telemark