

MEDIA FACTSHEET

NATIONAL ENVIRONMENT AGENCY'S DATA MANAGEMENT AND SHARING

Objective of Data Sharing

1 As part of its efforts to transform Singapore into a clean and green city, the National Environment Agency (NEA) leverages technology to safeguard the environment. One initiative is to provide real time environment-related information to the public, businesses and other government agencies.

2 The environmental information available includes data that is related to various aspects of public health and environmental protection. The provision of the data allows the public to plan their daily activities and protect their health. It also aims to encourage greater community ownership among individuals through crowd sourcing activities. This data also contributes to other government agencies research, specifically in the areas of public health and climate change.

Data Management Strategy

3 NEA has adopted the three guidelines when sharing data with public or government agencies.

- Data shared or published must be in a machine readable format to allow the easy use of data.
- Data shared should be published across its six online platforms (web, mobile, RSS, social media, digital map and Data Exchange Hub) so that more users can have access to the information.
- Data that has been classified as "Restricted" will be dealt on a case-by-case basis where appropriate data aggregation rules are employed. This is to improve the granularity of the data.

4 NEA has also put in place an internal committee called the Data Admin Group in May 2009 to ensure NEA provides good quality data and caters to data requests from other agencies efficiently. The committee provides oversight of data management specifically in the areas of timeliness, consistency and granularity of datasets that NEA shares.

5 NEA is currently building a Data Exchange Hub to operationalise the above strategies. This hub will integrate datasets directly via API suites that converts data to suitable formats before information is pushed to online platforms for public use. In the longer term, this hub will also serve as a platform to facilitate the sharing of external datasets from app developers or research communities to NEA.

Data Sharing and Co-creation Efforts

6 NEA proactively drives and participates in data sharing and co-creation initiatives to encourage data usage so that the public receives timely environment-related information. NEA also contributes to environment-related research to government agencies.

7 NEA's data sharing efforts and co-creation initiatives are as follows:

| Audience | Data Sharing Contributions |
|--|--|
| Government Agencies | 86 environment datasets and 17 spatial datasets contributed to SG Data/GeoSpace for inter-agency sharing. |
| Public | 77 datasets contributed to Data.gov.sg as part of public information and has also contributed to eight map layers to enrich the OneMap data points from SLA (e.g location of hawker centers, recycling bins, waste disposal sites, waste treatment centers, dengue clusters, NEA offices, and funeral parlours). |
| Schools/Institute of Higher Learning (IHL) | Co-created 17 geo-spatial applications with private organisations for public use from the SLA Spatial Challenge 2012. |
| Application Developers | Co-created a mobile application called X Dengue to provide real time alerts (SMS) on the formation of active dengue clusters using the data points (map polygons) provided by NEA. Co-created a point and shoot application, Clean-Lah, to report lapses in public cleanliness and hygiene matters. The application is integrated with NEA's feedback system to support closure of cases. |

| Audience | Co-creation Initiatives |
|--|--|
| Government Agencies | Participated in IDA's idea4apps challenge in January – April 2012. This challenge aims to bring together participants to brainstorm what data sets would be useful for public use. Participated in IDA's Call for Collaboration in May – October 2012 that brought together government agencies to co-create data sharing efforts with partners from the IT industry. Participated in other government led initiatives like the UP! Singapore Hackathon in June 2012. NEA contributed weather information to the data sandbox at this event. |
| Public | Actively publishes data on a suite of mobile applications to promote environmental ownership among individuals. These apps include NEA's myENV, Life Cycle Cost Calculator and Energy Audit. These apps are available for both iPhone and Android phone users. |
| Schools/Institute of Higher Learning (IHL) | Co-created 17 geo-spatial applications with private organisations for public information from the SLA Spatial Challenge 2012. |
| Application Developers | Co-created a mobile application called X Dengue to provide real time alerts (SMS) on the formation of active dengue clusters using the data points (map polygons) provided by NEA. |

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| | <p>Co-created a point and shoot application, Clean-Lah, to report lapses in public cleanliness and hygiene matters and is integrated with agency feedback system to support closure of cases.</p> <p>First government agency to organise a Hackathon from 26 to 28 April 2013. The event aims to engage developers and the public to crowd source ideas to build apps that promote active citizenry and environmental ownership among individuals.</p> |
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Data Sharing Platforms

8 As part of NEA's data sharing policy is to increase the accessibility of environmental data to its audiences. The NEA shares data on six platforms. These platforms are detailed below:

| Platform | Description |
|------------------------|--|
| Websites | <ol style="list-style-type: none"> i. Data Government Website www.data.gov.sg which publishes 77 environmental datasets are published in this website ii. NEA's Corporate Website (www.nea.gov.sg) which publishes environmental info such as weather, pollution index, vector info, etc iii. Meteorological Service Singapore Website (www.weather.gov.sg) which publishes weather info including satellite images |
| Mobile Platforms | <ol style="list-style-type: none"> i. Weather@sg (mobi-site for all mobile devices) <ul style="list-style-type: none"> • weather, PSI, rain maps, etc ii. myENV (IOS and Android devices) <ul style="list-style-type: none"> • water level info (location of water level sensors & maps) • weather data, such as heavy rain warning • pollution info PSI index • food hygiene and operators grading • location of hawker centers • crisis alerts (e.g. neighboring earthquakes / volcano eruptions / tsunamis, etc) iii. X-dengue (IOS devices) <ul style="list-style-type: none"> • polygon map on dengue clusters and sms alerts iv. Cleanlah (IOS and Android devices) <ul style="list-style-type: none"> • status/situation on lapses of public cleanliness & public hygiene |
| Digital Media Channels | <ol style="list-style-type: none"> i. <u>RSS feeds</u> <ul style="list-style-type: none"> • Nowcast www.weather.gov.sg/wip/pp/rndops/web/rss/rssNcast.xml • Further Outlook www.weather.gov.sg/wip/pp/rndops/web/rss/rssForecast.xml • 3 Days Outlook |

| | <ul style="list-style-type: none"> • www.weather.gov.sg/wip/pp/rndops/web/rss/rssOutlook.xml • Heavy Rain Warning www.weather.gov.sg/wip/pp/rndops/web/rss/rssHeavyRain.xml • PSI Update app2.nea.gov.sg/data/rss/nea_psi.xml • News Release app2.nea.gov.sg/data/rss/nea_news.xml • E- Magazine app2.nea.gov.sg/data/rss/nea_emag.xml • Legislation app2.nea.gov.sg/data/rss/nea_legislation.xml | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|--|---|----------|--|---|----------|---|---|---------|---|---|-----------------|--|---|---------------------|---|---|---------------|---------------------------|---|---------------|--------------------------|---|----------|---------------------|---|--------|---------------------------------|
| Social Media Platforms | NEA Twitter http://twitter.com/neasg which pushes information on weather info such as heavy rain warnings, hourly PSI level updates, and weather forecasts. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Map Platform | NEA provides environment-related information to enhance the effectiveness of the OneMap application. This application provides environment-related information such as the placement of recycling bins, dengue clusters, etc. NEA updates the eight environmental datasets it provides to OneMap regularly. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Online API Sets | <p>API programming codes for software developers and environmental enthusiasts to embed their software for the seamless access of environmental info. There are currently eight API sets published: http://projectnimbus.org/2010/04/11/datasets-singapore-national-environment-agency-nea/</p> <table border="1"> <thead> <tr> <th></th> <th>Datasets</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Forecast</td> <td>Weather forecast for various areas in Singapore</td> </tr> <tr> <td>2</td> <td>Nowcast</td> <td>Current weather conditions for various areas in Singapore</td> </tr> <tr> <td>3</td> <td>Aircon Inverter</td> <td>Dataset for Air conditioners with inverter</td> </tr> <tr> <td>4</td> <td>Aircon Non-Inverter</td> <td>Dataset for Air conditioners without inverter</td> </tr> <tr> <td>5</td> <td>Clothes Dryer</td> <td>Dataset for Clothes Dryer</td> </tr> <tr> <td>6</td> <td>Refrigerators</td> <td>Dataset of Refrigerators</td> </tr> <tr> <td>7</td> <td>Vehicles</td> <td>Dataset of Vehicles</td> </tr> <tr> <td>8</td> <td>Events</td> <td>List of events organised by NEA</td> </tr> </tbody> </table> | | Datasets | | 1 | Forecast | Weather forecast for various areas in Singapore | 2 | Nowcast | Current weather conditions for various areas in Singapore | 3 | Aircon Inverter | Dataset for Air conditioners with inverter | 4 | Aircon Non-Inverter | Dataset for Air conditioners without inverter | 5 | Clothes Dryer | Dataset for Clothes Dryer | 6 | Refrigerators | Dataset of Refrigerators | 7 | Vehicles | Dataset of Vehicles | 8 | Events | List of events organised by NEA |
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9 The development of the 'Clean Lah' application is an example of how the NEA works with private application developers to share its expertise to promote environmental ownership through active citizenry among the public.

10 NEA's role in this partnership is to provide domain expertise and relevant environmental datasets, as well as promote the access to environment-related information. The developers, on the other hand, provide a platform that integrates creative user interfaces to optimize user experience when the public uses the application.

12 The 'Clean Lah' application was developed in response to public feedback on cleanliness lapses. This mobile app (iOS and Android), launched on September 2012, allows the public to report cleanliness lapses quickly. The app also gives NEA a better sensing of cleanliness lapses on the ground. This allows NEA to improve its service standards, and to plan and deploy its resources efficiently. NEA also uses this application to update users and inform them that their feedback has been resolved.

13 Users can report cleaning lapses in just four-clicks. Without having to provide detailed user information, users now can use location based services and their cameras to submit pictures of cleanliness lapses they encounter at the ground. The geo-tagged pictures helps NEA identify the problem areas quickly and efficiently. Once the problem is resolved, the user will be informed via push notifications on either their iPhone or Android smartphones.

14 To date, the 'Clean-Lah' application has a total of about 6,000 users. This application complements also NEA's myENV app which has about 130,000 downloads currently.

15 In the longer term, NEA plans to develop more platforms to promote and strengthen environmental ownership. These platforms will continue to leverage datasets and co-creation initiatives to foster environmental ownership among communities and individuals.

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