

My Forecast 2030

Published On: 03 April 2017

Organisation: Dubai Electricity and Water Authority

Country: United Arab Emirates

Level of government: Central government

Sector: General public services

Type: Data, Methods

Launched in: 2012

Overall development time: 1 year(s) 1 month(s)

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Description

DEWA is responsible for securing electricity and water for the 2.5 million person in Dubai, 9 Power and desalination plants are currently accomplish this. The decision of adding a new plant is based on the P&W demand Forecast Reports. Before the initiative, Dubai's P&W Demand forecast figures was developed from simple trending of historical consumption & development projects demands. This works well for short terms, but new challenges arouse;

- 1 Suitability for longer-term investment plans beyond 3 years to 2030.
 - 2 Suitability for Dubai Clean Energy Strategies.
 - 3 Uncertainty of data & need to support Risk Management.
 - 4 Confirmation to best international practices.
 - 5 Study the impacts of economic and demographic growth on demand.
 - 6 Address the effects of weather on P&W demands.
 - 7 Maintain prediction accuracy above 95%.
 - 8 Integration of energy conservation and DSM strategies.
 - 9 Ensuring sustainable and constant water and energy sources and to supply Dubai.
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Why the innovation was developed

- My Forecast 2030 was developed via extended brainstorm sessions. The idea was launched at the beginning of 2012 with clear objectives and action plan leading to the development of new innovative models for future predictions of P&W utilizing latest scientific methods in Econometrics and Applying the Theory of Cointegration (winner of the Nobel Prize in Economics in year 2003) to demand variables.
 - Team conducted comprehended study and research for 30 standard international models, shortlist them to 9 models and them applied an integration comparisons to arrive at the most appropriate in the context of Dubai.
 - The new models were capable of directly linking forecast with economic & demographic growth in Dubai for the first time, locally and regionally because it is based on the latest scientific analysis methods Macroeconomic Time Series Analysis.
 - Managed risk of uncertainty via multiple scenarios planning. Entirely developed & implemented by internal expertise.
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Objectives

Improve efficiency, Improve service quality, Support economic growth

- The initiative is being implemented by Dubai government authorities as initiative results were officially adopted by Dubai Supreme Council of Energy for its energy strategy plan 2030 to set Electricity and water rationing targets by 30% and energy supply mix for 2030
 - Ensure ongoing and sustainable sources of energy work to provide 100% of the electricity and water needs of the Emirate. Dubai Municipality's adoption for the my Forecast 2030 initiative results for the optimal allocation of development land requirements and paths in urban planning of the Dubai city
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Main beneficiaries

Businesses, Civil Society, Government bodies

Results

Efficiency

- Implementation of the initiative as planned and within time (during 13 months) and exceeded targets. Enriched knowledge gained from training employees on the program and innovative models. Big savings resulted from not hiring an external consultant, estimated at about AED .2 million.
 - Benefit from knowledge transfer and sharing lead to savings in training equivalent to AED.0.5 million. Initiative results were officially adopted by Dubai Supreme Council of Energy for its energy strategy plan 2030 to set P & W rationing targets by 30% and energy supply mix for 2030. Incorporate rationalization effect on demand for P&W.
 - Support DEWA strategic plans & contribute to achieving eight strategic objectives to the Commission. Developed by internal resources; Qualified specialized skilled Engineers from each departments. The cumulative financial savings (875 million Dhs. By 2015). The impact of the initiative on reducing environmental footprint (132 tons CO2, 432 tons NOx).
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Service quality

Reliability:

- Ensure ongoing and sustainable sources of energy work to provide 100% of the electricity and water needs of the Emirate.
- Enhance planning by using multiple scenarios. Dubai Municipality's adoption for the my Forecast 2030 initiative results for the optimal allocation of development land requirements and paths in urban planning of the Dubai city. Determine goals of electricity and water diversification sources.

Development

Design

The idea of coming up with new innovative P& W Demand Forecast methodology that tackles the current challenges faced due to the dynamic and the Ambition of Dubai Government. Moreover, to support Dubai Strategies and Plans. • The team lead by Dr. Nasser suggested the idea for the EVP approval. front Staff were the head of participated departments in the project. task force engineers have interacted with all users and stakeholders to collect required data, then conducted comprehended study and research for 30 standard international models, shortlist them to 9 models and them applied an integration comparisons to arrive the appropriate Dubai model. The innovation initiative was adopted in the formulation of the new Dubai clean energy strategy 2050 and won an Internal Award for “Dubai Government Excellence Program – Distinguished Initiative Administrative Category” 2015. Design time: 5 month(s)

Testing

- the method adopted by the team for testing was trials
- The team conducted comprehended study and research for 30 standard international models, shortlist them to 9 models and them applied an integration comparisons to arrive at the most appropriate in the context of Dubai.

Testing time: 3 month(s)

Implementation

Tools used:

- The team conducted comprehended in house study and research for 30 standard international models, shortlist them to 9 models and them applied an integration comparisons to arrive the appropriate Dubai model.
- Results of the new innovated models were sustainable having positive impact on the Emirate and the State.
- The new models were based on the latest scientific analysis methods Macroeconomic Time Series Analysis thus directly linking forecasting with the economic and demographic growth in Dubai for the first time, locally and regionally.
- The new models succeeded in Facilitating management decisions for investment for infrastructure expansions and designing of water and power networks future expansions schemes and adopted policies and strategies of Dubai on energy and water.

Resources used:

- Financial resources: Human Resources: a core group from the sector and support of relevant departments. Implementation of the initiative by internal competencies.
- Technical and knowledge Resources: Acquisition of computer and training form budget worth 110 000 AED. Decision Suite software package and team specialists in modern scientific integration Positive Energy: Team collaboration and brain storming Qualified expertise among the team Positive energy of the team Engagement and supportive of leaders. Interdepartmental Budget.

Implementation time: 3 year(s)

Diffusion

- The idea was to come up with new innovative Power & Water Demand Forecast methodology that tackles the current challenges faced due to the dynamic and the Ambition of Dubai Government. Moreover, to support Dubai Strategies and Plans
- The team conducted several awareness sessions and knowledge sharing as per DEWA's practice.

Diffusion time: 2 month(s)

Challenges and solutions

- Difficult to research and develop and test appropriate models and choice for long term demand forecasting in Dubai
- Insufficient economic and demographic data and system requirements and weather data
- The difficulty of applying the change by employees from outside the team, such as production and distribution Division and distribution section
- Mandated experts within scientific study group by reference to the universally adopted scientific methods and research and recent theories that fit the long term forecast
- Communication skills through regular meetings with stakeholders and to clarify the importance of the availability of data on the strategic outlook for electricity and water
- A number of awareness-raising workshops introducing the expected positive results when applying the initiative.

Partnerships

Various partners

Academics and Research Bodies, Other, Other Public Sector, Private sector

some of these partners are our data source and some are the beneficiaries, for example: DSC is data provider for all statistical data of Dubai, while Power and Water generation and Desalination Division is one of the stakeholders benefited from the innovation and saved from its budget and the cumulative financial savings reached 875 million Dhs. in 2015.

Lessons Learned

Lessons Learned

- the following worked well and is good to have in any initiative: 1 Team collaboration and brain storming 2 Qualified expertise among the team 3 Positive energy of the team 4 Engagement and supportive of leaders.
 - the following worked less well: Insufficient economic and demographic data and system requirements and weather data. The difficulty of applying the change by employees from outside the team, such as production and distribution Division and distribution section.
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Conditions for success

- eamcollaboration and brain storming
 - Qualifiedexpertise among the team
 - 3Positiveenergy of theteam
 - Engagementand supportive of leaders
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Other information

Regional

and local leadership through include climate effects on demand of electricity and water for the first time our

innovation have high level of Creativity through combination of power and water needs

assessment skills, economics and statistics resulting innovative models for forecasting. Adapting the

methods of forecasting used by international bodies and come up with a new innovative way to Dubai.

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