



مجلس البحث العلمي  
The Research Council

# Overview of Smart City Initiatives in Oman

**Dr. Ali Al Shidhani**

**Director of ICT Research**

**The Research Council**

**Industry Liaison Officer, IEEE Oman Section**

# Smart City, what is it?

“A smart city brings together technology, government and society to enable the following characteristics:

smart economy

smart mobility

smart environment

smart people

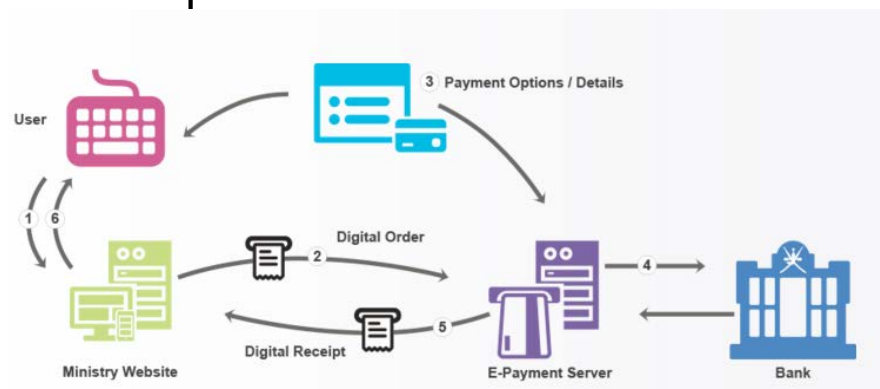
smart living

smart governance”

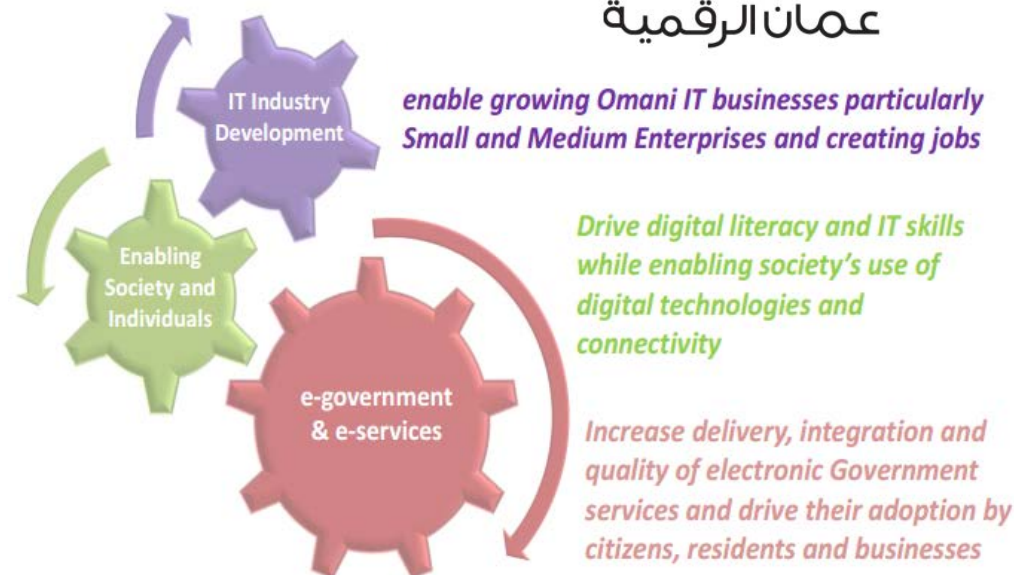
# Smart Government Initiatives

## Information Technology Authority

- Digital Oman strategy
- E-transformation initiatives
  - E-Payment gateway
  - eHealth portal
  - Educational portal
  - Open Data initiatives



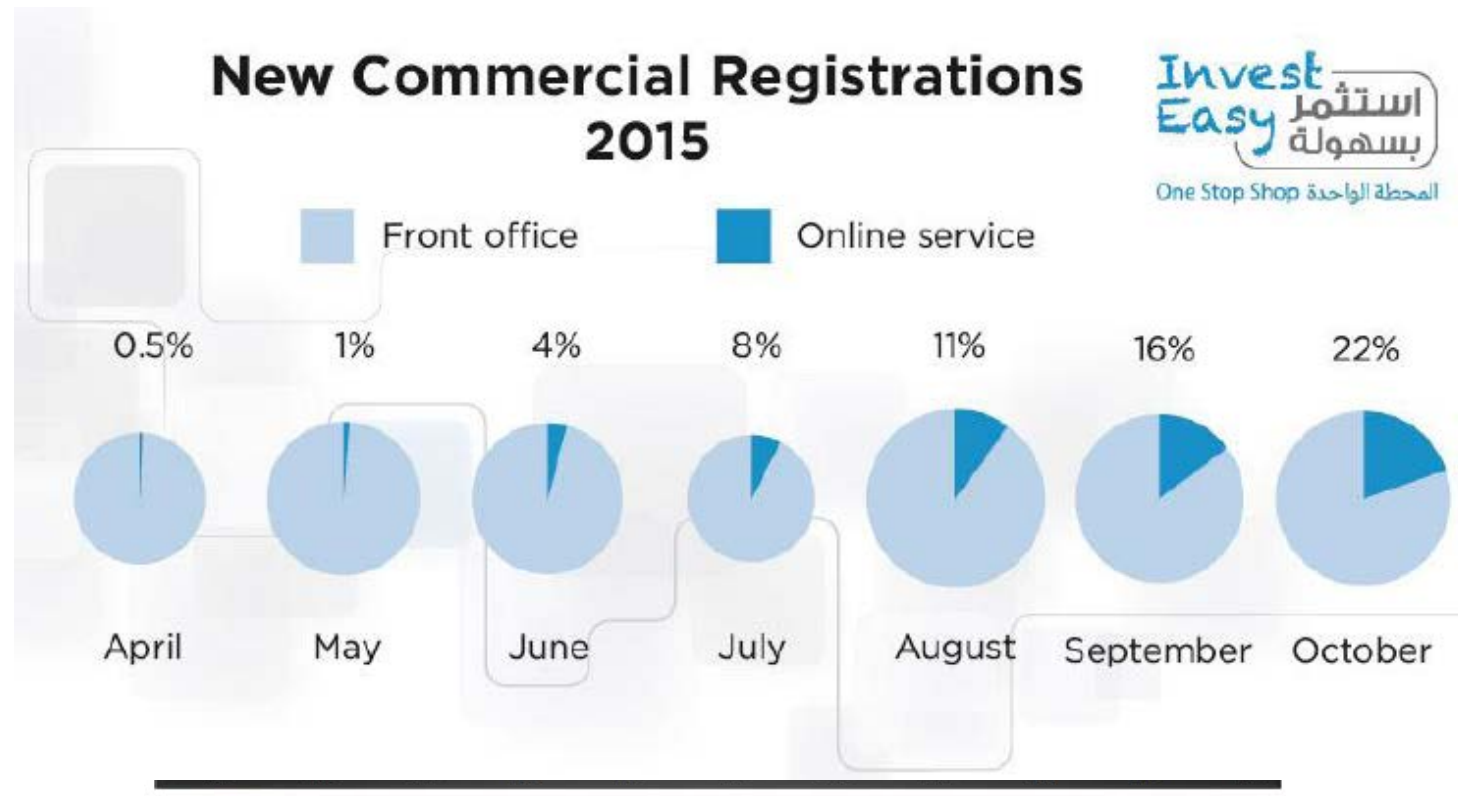
عمان الرقمية



Ministry of Health  
Sultanate of Oman

eHealth Portal

# Smart Government Initiatives



# Smart Government Initiatives

## National Center for Statistics & Information

- Oman National Spatial Data Infrastructure (ONSDI)
  - Location Enabled Smart Government

**“Build a standardized Geo-Spatial Infrastructure to facilitate the access to an organized, standardized, and up-to-date sharable geospatial information for enabling a high quality location based Government services and solutions”**

# Smart Government Initiatives

## National Center for Statistics & Information

- Oman National Spatial Data Infrastructure (ONSDI)
  - Geo-Platform - Geo-Spatial Data Sharing Platform
    - To provide mechanism/infrastructure to facilitate the utilization and sharing of geospatial Information
    - Standardization of geographical information to support decisions and implementation of projects
    - Availability of spatial information to users





# Smart Government Initiatives

المركز الوطني  
للإحصاء  
والمعلومات



NATIONAL CENTRE  
FOR STATISTICS  
& INFORMATION

## National Center for Statistics & Information

- Oman National Spatial Data Infrastructure (ONSDI)
  - Tour Oman
    - Tourism oriented mobile application
  - GeoSmart Banking & Insurance
    - Financial services oriented mobile application
  - Waqudi
    - Automotive services oriented mobile application



# Smart Government Initiatives

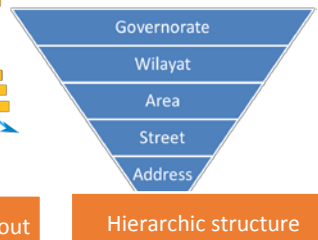
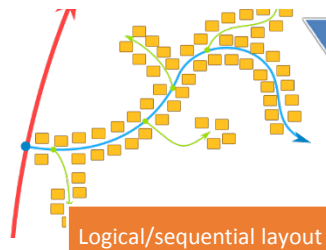
## National Center for Statistics & Information

- National Unified Addressing System
  - The Project aims to implement a Unified Addressing system across Sultanate of Oman

Improve Economic & Societal benefits

Advanced and integrated Address Management System

Execute Smart eCensus 2020






# Usage of Social Media

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
Hujan deras di Mahout. Harap berhati-hati dari meluap lembah. Jangan mengambil risiko lembah persimpangan

← ↻ ٧ ❤️ ٢

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
யானைப் பாகன் மழை. பள்ளத்தாக்குகள் நிரம்பி வழிகிறது கவனமாக இருக்க வேண்டும். கடப்பு பள்ளத்தாக்குகள் ஆபத்து இல்லை

← ↻ ١٠ ❤️ ٦

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
Malakas na pag-ulan sa kutsero ng mga elepante. Mangyaring maging maingat ng umaapaw lambak. Huwag panganib crossing lambak

← ↻ ٨ ❤️ ٢


 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
نرجو توخي الحذر والإبتعاد عن مجاري الأودية والتجمعات المائية وذلك بسبب غزارة الأمطار حالياً بمنطقة الحج بولاية محوت  
#أشوبيا\_عُمان

← ↻ ٨٥ ❤️ ٤٣


 **PACDA.OMAN** ✓  
@PACDAOman

Please be careful and leave the valleys flow and water gatherings because of strong rainful rightnow in Mahut

٢:٢١, ٢٠١٥/٦/١٢ م

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
মাহুত ক্রিসমাস মধ্যে অ্যাংরি পাখি বৃষ্টি. উপত্যকার উদ্বেল সতর্কতা অবলম্বন করা আবশ্যিক করুন. পারাপার উপত্যকার ঝুঁকি না

← ↻ ١٦ ❤️ ٤

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
महावत में भारी बारिश। घाटियों बह निकला से सावधान रहने दीजिये। क्रासिंग घाटियों जोखिम नहीं है

← ↻ ١٠ ❤️ ٣

 **PACDA.OMAN** @PACDAOman ٢٠١٥/٦/١٢  
بارش باران های سنگین در فیلبان. لطفا دقیق پر دره باشد. آیا دره عبور از ریسک نیست

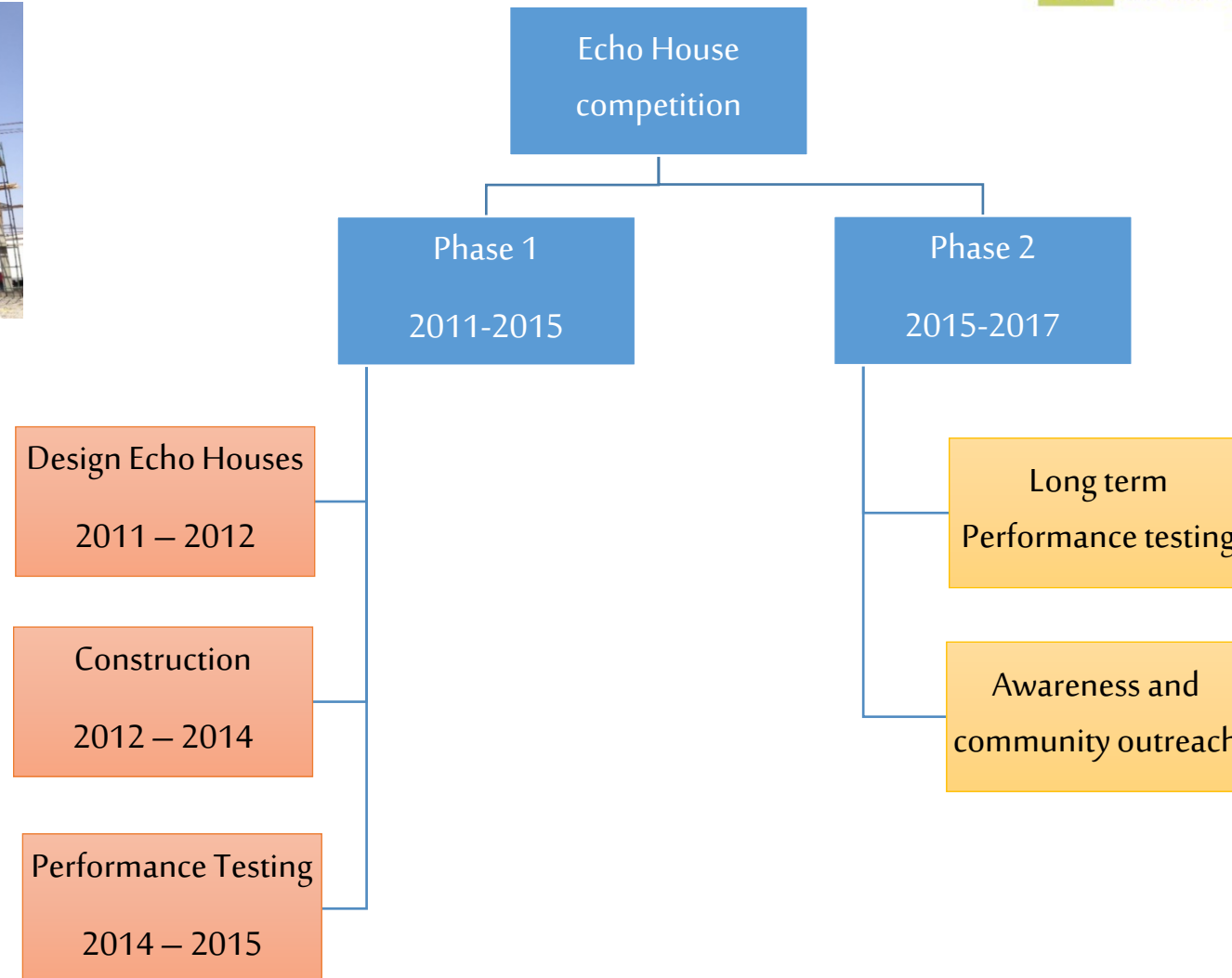
← ↻ ١٥ ❤️ ٥

# Oman Echo House Design Competition

- Aim: Raising Awareness of the Possibilities and Importance of Green Buildings and Eco-Design in Oman
- Objectives:
  - Saving the environment
  - Water conservation
  - Use of renewable energy
  - Use of Information Technology tools

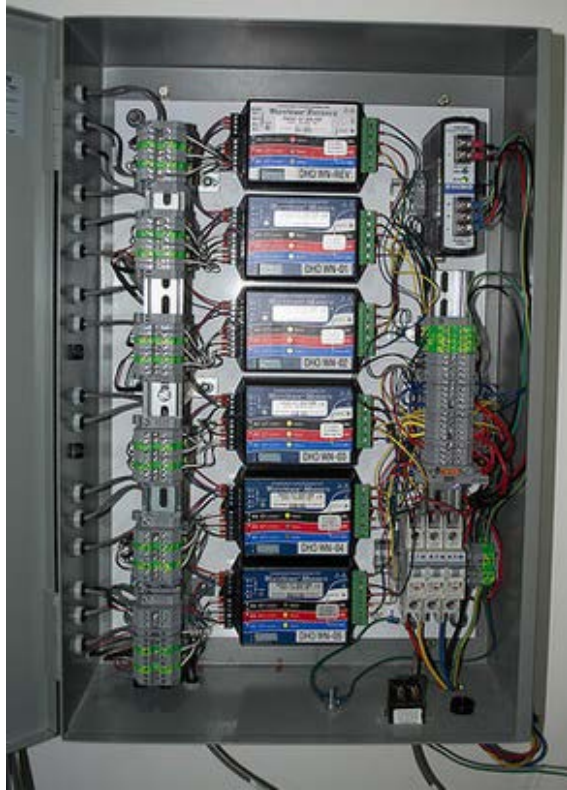


# National competition between Higher Education Institutes






# Installation of Measuring Instruments

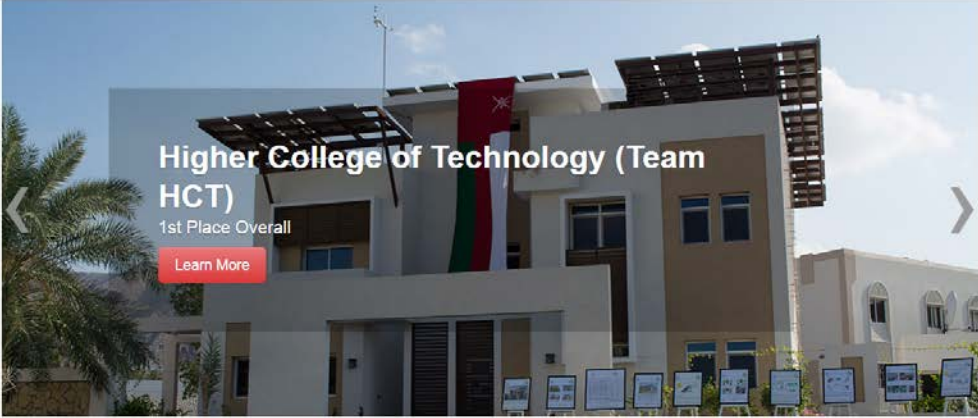


# Development of online monitoring portal <https://ecohousecompetition.org/>



Raising Awareness of the Possibilities and Importance of Green Buildings and Eco-Design in Oman

[Home](#) [About](#) [Teams](#) [Blog](#) [Scores](#) [Measurements](#) [Contacts](#)

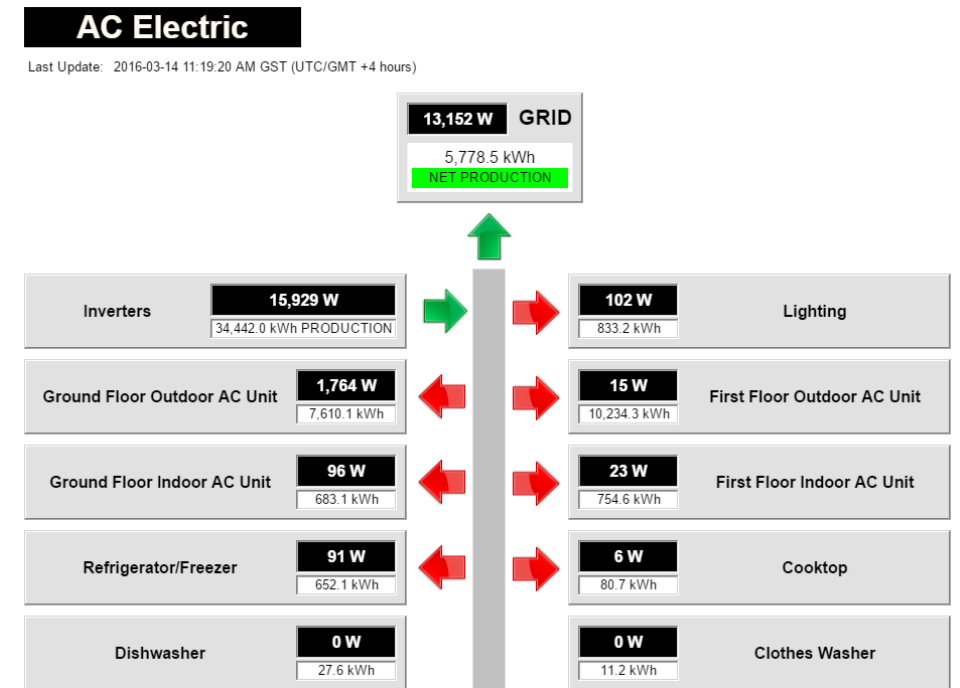


**Higher College of Technology (Team HCT)**  
1st Place Overall  
[Learn More](#)

**Scores**  
Explore detailed scores and scoring input data to understand the dynamics and strategies of the competition in more depth  
[View »](#)

**Live Data**  
View live data dashboards to see how each of the houses is performing right now and during recent hours  
[View »](#)

**Historical Data**  
Download and analyze raw data files to identify interesting building performance and occupant behavior patterns  
[View »](#)





and the winners are ...



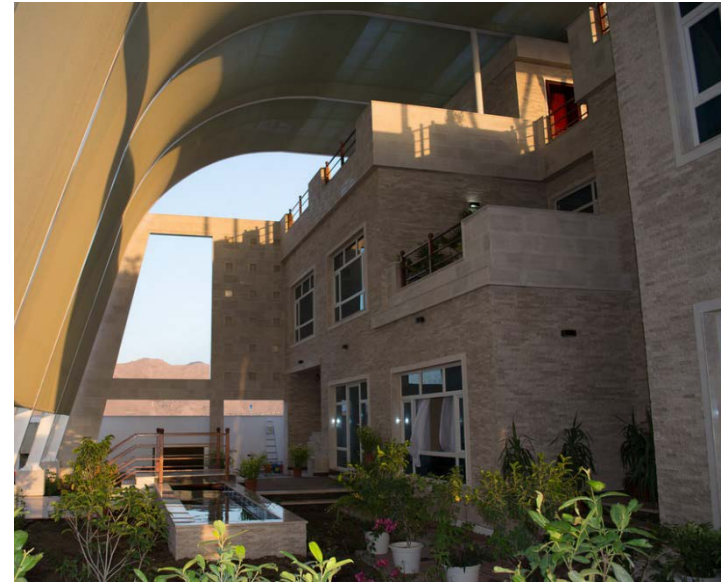


and the winners are ...



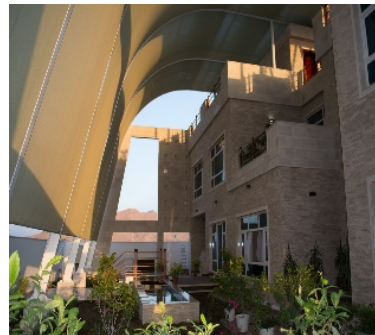


and the winners are ...



# Oman Echo House Design Competition – Phase 2

- Objectives:
  - Challenge the teams to validate the long-term performance of the exciting ECHO houses
  - Introduce the five houses to the community, and take important steps toward transforming the mainstream housing market in Oman.





# Innovation Park Muscat (IPM)

- District Cooling System at IPM
  - Reduction of energy consumption by using renewable energy
  - Generation of more energy by recycling waste heat
  - Protection of the environment by reducing carbon emissions
- Ability to reduce energy consumption by 84%



# Research activities funded by TRC

- Open Research Grant proposals in Smart health, IoT, Geospatial analysis, traffic management, Big Data, etc...
  - 12 proposals received out of 49 general ICT proposals
  - 3 funded projects with total budget of 315K OMR
- Open Research Grant proposals in renewable energy
  - 12 funded projects with total budget of 1.2M OMR
- Undergraduate Projects (FURAP)
  - 5 projects (approx. 12K OMR) out of 22 project
- Smart City Center of Excellence

# Research activities funded by TRC

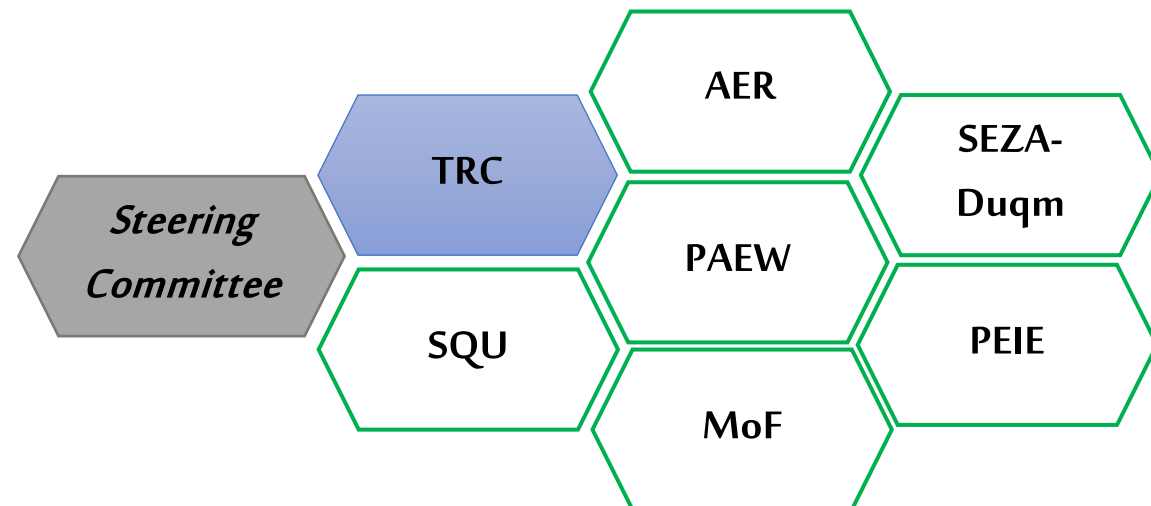
## Renewable Energy Strategic Program

### **Vision:**

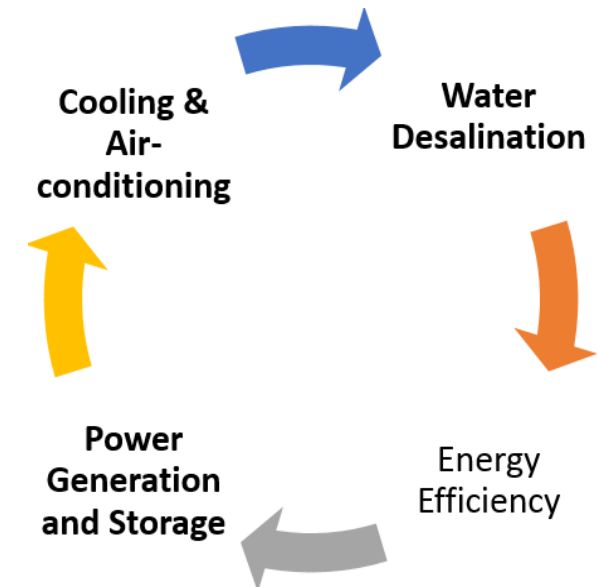
Towards clean and sustainable energy

### **Mission:**

To conduct high quality scientific, experimental research to seek and propose real solutions for national challenges of renewable energy and energy efficiency



## Research Themes





# Wind Farm at Harweel, South of the Sultanate

- It is being jointly developed by Rural Areas Electricity Company (RAECO) and Masdar Institute
- Capacity of 50 megawatts (1500 house) expected to begin operating end of 2017
- Consist of up to 25 turbines (2MW - 3.2MW each) with \$125 million estimated cost

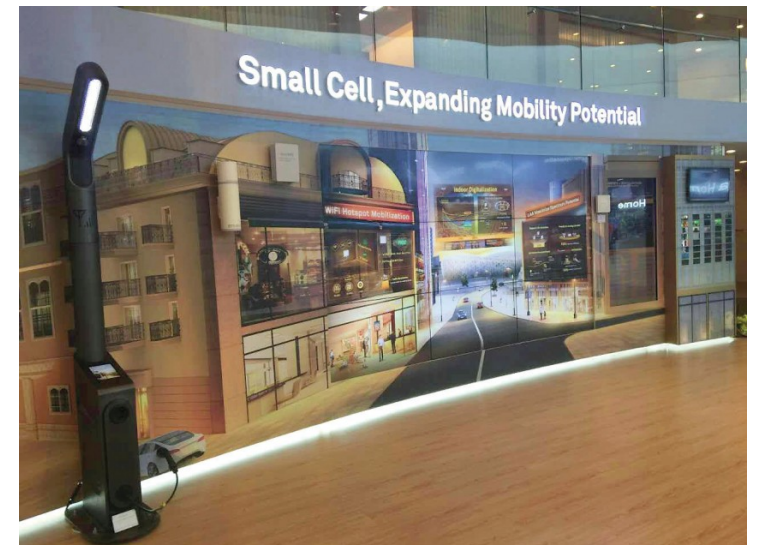


# Miraah, One of the world's largest solar plant



# Smart Technologies

- Omantel's Zero site pole solution with Ericsson
- Smart Street Lamppost solutions with Huawei
  - 3G, 4G and WiFi services
  - Can be integrated with cameras and sensors to allow IoT solutions
- Omantel 3.0 strategy





# Smart Living

- Muwasalat projects
  - WiFi service
  - Tourism information
  - Real time tracking and online ticketing app
- Muscat Municipality projects
  - iMuscat
    - Booking parking spaces using smartphones
    - Send feedback and complains
    - Monitor service request
  - Free WiFi at selected parks



Stay connected with Omantel Wi Fi services with Muscat Municipality

Omantel hotspot (WiFi) provides you with a free internet access across:

- Al Amerat Park
- Al Naseem Park
- Al Qurum Park

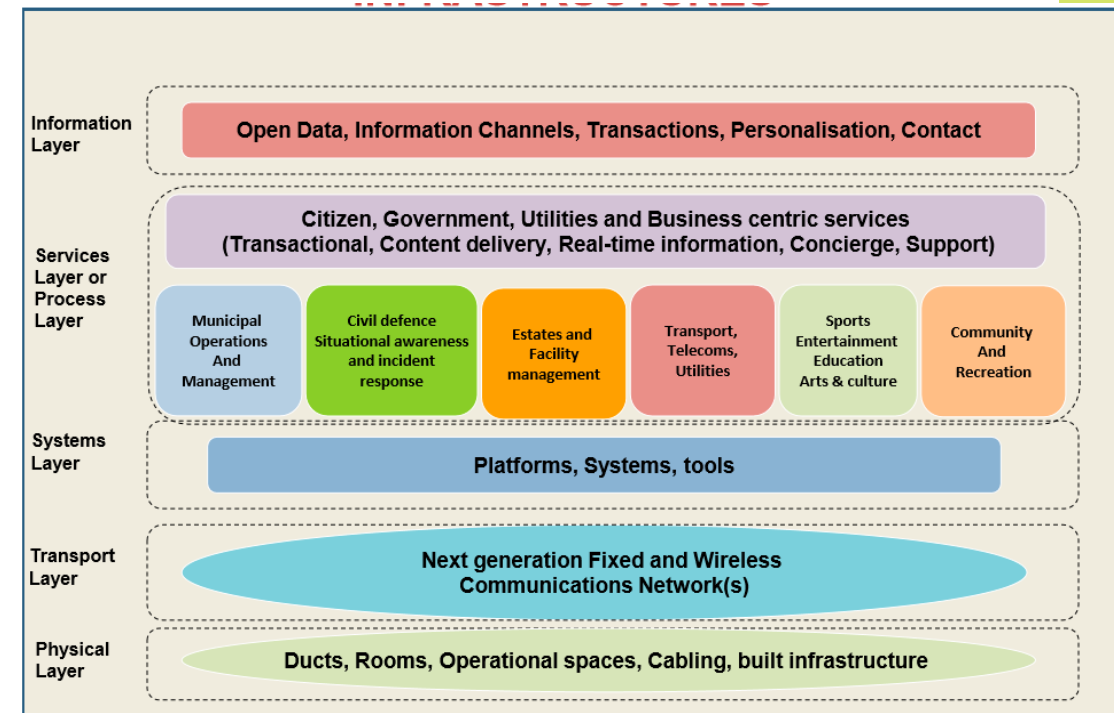
More parks will be covered with Omantel hotspot Wifi service soon.

# Smart Living



## Omran - Madinat Al Irfan

- Master planning phase
- To contribute 450-500M OMR to GDP
- Intelligent Traffic light control
- Smart metering
- Smart parking services
- Digital ads, push messaging
- Sensor networks



# Support from regulators

- Telecommunication Regulatory Authority
  - Regulating usage of drones and IoT addressing
- Authority for Electricity Regulations
  - Encouraging adoption of smart meters
- Oman Broadband Company
  - National Broadband Strategy
- Public Authority for Electricity & Water
  - Renewable Energy Strategy

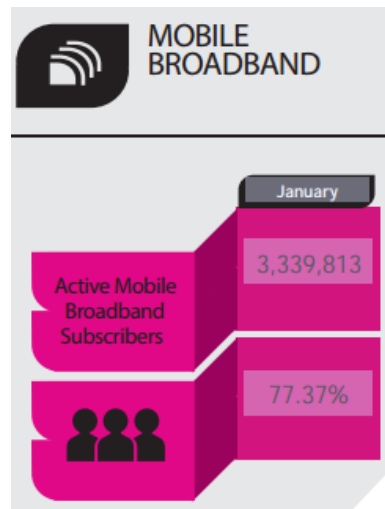


# Challenges

- Lack of PPP based initiatives
- Scattered efforts
- Research and innovation in Smart Cities
- Financial situation hinders investment in new projects

# Opportunities

- 153% mobile penetration rate, 77% mobile broadband penetration
- Youth population embraces technology (67% of the population between 10 and 44 years old)
- Technology availability and readiness
- More emphasis on Smart Logistics and smart tourism



Networked Readiness Index		42	4.5		
1-7 (best)					
Subindex A: Environment subindex 1-7 (best)		43	4.5		
1st pillar: Political and regulatory environment 1-7 (best)	36	4.3			
2nd pillar: Business and innovation environment 1-7 (best)	46	4.7			
Subindex B: Readiness subindex 1-7 (best)		62	4.9		
3rd pillar: Infrastructure and digital content 1-7 (best)	61	4.3			
4th pillar: Affordability 1-7 (best)	67	5.4			
5th pillar: Skills 1-7 (best)	75	4.9			



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The Research Council

# Thank You!!

[Ali.alshidhani@trc.gov.om](mailto:Ali.alshidhani@trc.gov.om)

[trc.gov.om](http://trc.gov.om)