State Of Israel

Ministry of National Infrastructure

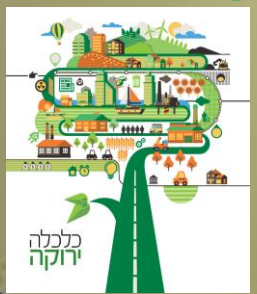
Energy and Water

smart city world congress

Kyoto March 2014

Green Economic Development

The Israeli Governmental roll to promote green economy in Smart cities in Israel



Present By:
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Israel Figures and Numbers

Demographic and Geographic Data

- Land - 20,700 square KM
- Population – 8 million, about 7.3 of them live in cities (91%).
- Most of the population lives along a narrow strip of land along the coastline.
- More than 65% of the population lives on less than 13.5% of the land.
- The density of the population in Tel Aviv stands at 8009 and the cities in Israel are still developing.
- High education: 33 student per 1000 people total of (257K/8000K)

Transportation and motorization Data

- Motorization level : About 345 vehicles per K capita.
- About 19,000 KM’s of roads.
- About 145 vehicles per road KM.
- In Tel Aviv and the surrounding cities the motorization level stands at about 400-640 vehicles per K capita.

Economic and Energy Data

- GDP per Capita – 33,000 US$ (2012).
- Primary energy supply: 23.5 MTOE
- Final consumption of Energy : 14.0 MTOE
- Total of CO_2 emissions about: 70 Million Ton.
- Electricity consumption: 57 GWh.
- Prediction of total annual electricity consumption by 2020, 80 GHh without energy conservation, 64GWh with EC.
- Primary energy per capita – 3 TOE.
- Electricity per capita stands at about 6,703 KWh.
- About 85% of the total energy is consumed in the cities.
- R&D 4% of the of the GDP (civilian R&D)
- 47.4% from the Israeli export is High-tech

Background

- With the expansion of the need for services and the rise in living standards, it became more and more difficult to supply modern services.
- The state of Israel met this challenge through the establishment of the “Smart Cities Administration”. It is believed that “Smart Cities” cannot survive out of context, therefore the government had to take the lead.
- We adopted the "smart cities" concept, however, we prefer to use the term “Sustainable Human Habitat” or “Sustainable Existence in the City” (SECI). In Israel's case, this approach offers us holistic solutions, by taking into account a wide-range of interconnected issues.
- We adopted our experience form our activity and concept for energy conservation to smart cities

Challenges

- Scarce land, Energy and water resources.
- Immigrants absorbing country.
- Non homogeneous population.
- Most of the cities are there.
- Old infrastructures.
- High Standard of Living.
- Unstable geopolitical neighborhood.
- Israel is a kind of an energy and other resources Island.
- Population growth 1.9% a year

Opportunities and strengths

- A highly educated population with a high percentage of internet, computers and smart-phone usage.
- Israelis are multi-lingual, most of them speak English and other languages in addition to Hebrew.
- High Tech Bio Tech economy specialized in software, cutting edge technologies, communication and internet technologies, water tech and sophisticated agriculture.
- Israel is known for optimizing the use and recycle of water ; 80% of the total consumed water is recycled, and in 2015 – 100% of the total drinkable water for domestic uses will be desalinated.

The Israeli government's goals

- Supplying modern services to an ever growing population with growing living standards.
- Addressing local and global growing expectations for a sustainable economy with lower use of energy and subsequent greenhouse gas emissions.
- Enhancing the use of internet, communication and management technologies in transportation, water supply, sewage treatment, energy production, supply and use, waste management and other basic public services such as, social services and education.
- Contributing to public health and cleaner environment in every aspect.

- Integrating all data and information produced in the cities and around them.
- Promoting the development of green economy and green employment true the establishment of local market for local needs.
- Developing local enterprises (social and economical).
- Enhancing ecologic neighborhoods within the existing cities.
- Upgrading the public transportation and promoting green transportation.

Obstacles in applying Smart Cities Policy

- Central government leaves little space for local authorities.
- Regulatory barriers.
- Existing old infrastructures in most of the cities.
- Socio- economical barriers.
- Cultural barriers
- Insufficient coordination between various data sources, need to be regulated and standard.
- National limitations such as security installations which are located inside the municipal areas.

Benefits in promoting Smart Cities

- Cleaner cities and environment.
- More justice society that shares the wealth.
- Maximizing the local resources such as land, infrastructures, man power and budgets.
- Supplying high standards services.
- Presenting high standards and goals for the cities.
- Creating a healthy competition between the cities.
- Finding and addressing various inefficiencies in the cities and their interaction with the government.

- **Developing green, sustainable and smart economy**.
- Public participation in decision making, may improve it's satisfaction from the city's services .
- Encouraging the private sector to develop relevant High Tech solutions and products .
- Encouraging high-tech innovation.
- Preparedness for emergency situations.
- Improving the image of Israel.

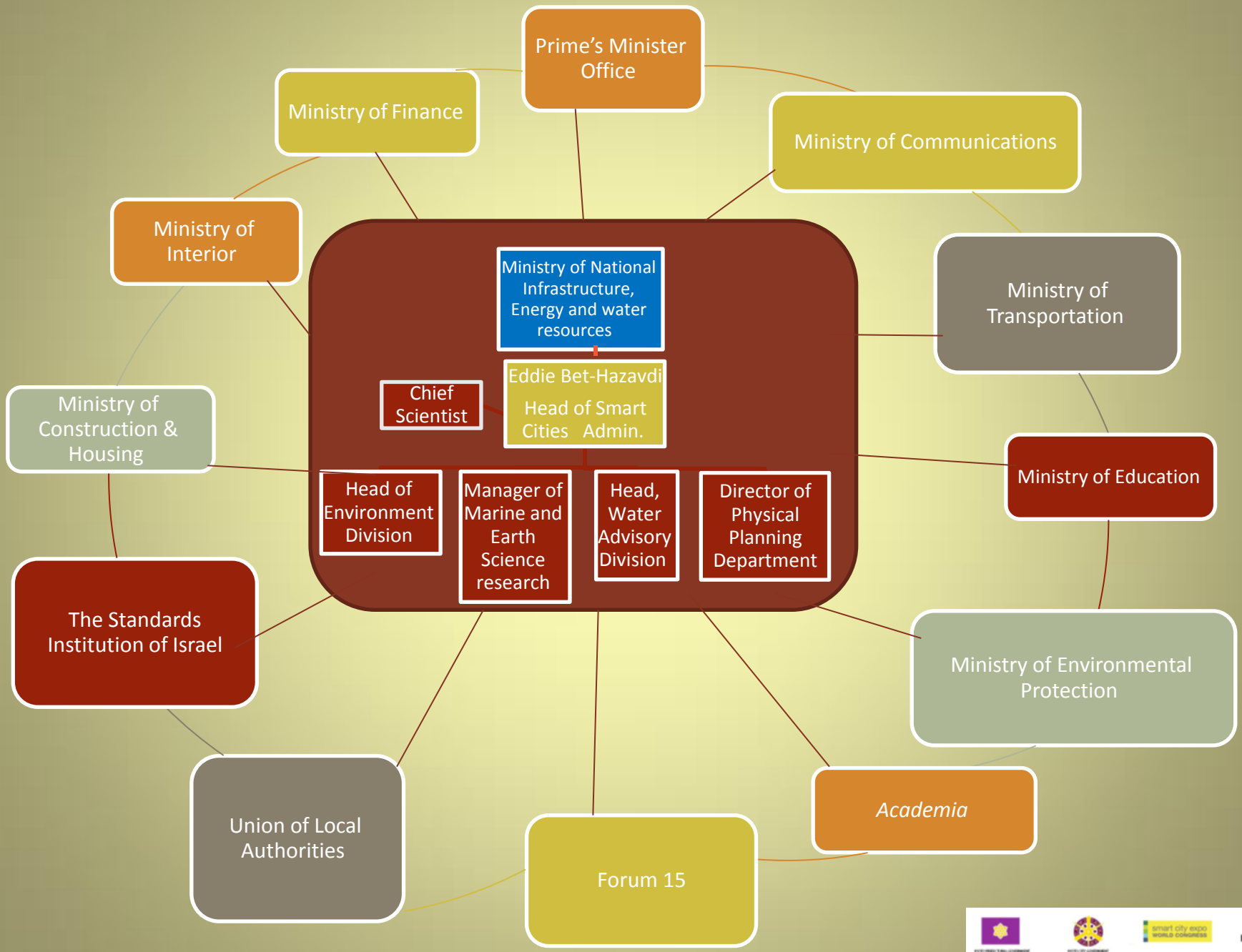
The Israeli government's policy tools

Towards this end , the government decided on:

The establishment of "**smart cities administration**".

- The smart cities administration operate under the mandate of Prime Minister Office and the Ministry of National Infrastructures Energy and Water.
- Member of the administration are from all major ministries , the union of local authorities, the Academia and the Israeli Standards Institute.

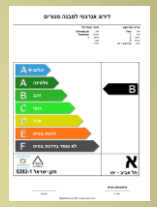
Digital Israel – Smart Cities Administration



- Projects such as :
- **Digital Israel.**
- **The “National Water Supply” (whole water cycle)**
- **The "National Energy Plan“.**
- **Transportation and mobility plans.**
- **New National Building code.**
- **National plan for sustainable development.**
- **National green growth.**
- **Promoting R&D and encouraging of Cutting edge technologies.**

Were implemented or are currently in preparation.

- New standards for green buildings and green neighborhoods are being considered - ISI 5281.
- Energy Standards in Buildings ISI 5280 will soon be adopted to be mandatory.
- Standards for Energy ratting in Building 5282



- ISO.IEC 14543-5 Information technology -- Home electronic system (HES) architecture.
- Implementing ISO and other international standards such as ISO14000, ISO 50001 and ISO 13201.
- Local accreditation for smart cities based on cultural aspect (Arab, Jews orthodox ect.).
- National plan for smart grid is now discussed.

The Israeli government's policy tools

- The government has allotted financing for research and development on "smart cities", including pilot projects in some cities for :
  - Transportation.
  - Smart lighting.
  - City energy monitoring and management
  - Wide bandwidth "free Wi -Fi"
  - An information data center.
  - Smart Grid
  - Smart water cycle
  - Socio-economical academic researches.
  - Adopting international standards.

  Local, as well as imported technologies are being used.

International Standards for smart cities that will adopt in Israel in 2014

- Guidance for community sustainable development "BS 8904 (2011)“
- Sustainable development and resilience of communities - Management systems - General principles and requirements ISO 37101
- Sustainable development and resilience of communities - Global city indicators for city services and quality of life ISO/DIS 37120
- Harmonized metrics for benchmarking smartness of infrastructures ISO/AWI 37151

A dual-language (Hebrew & English) table of categories

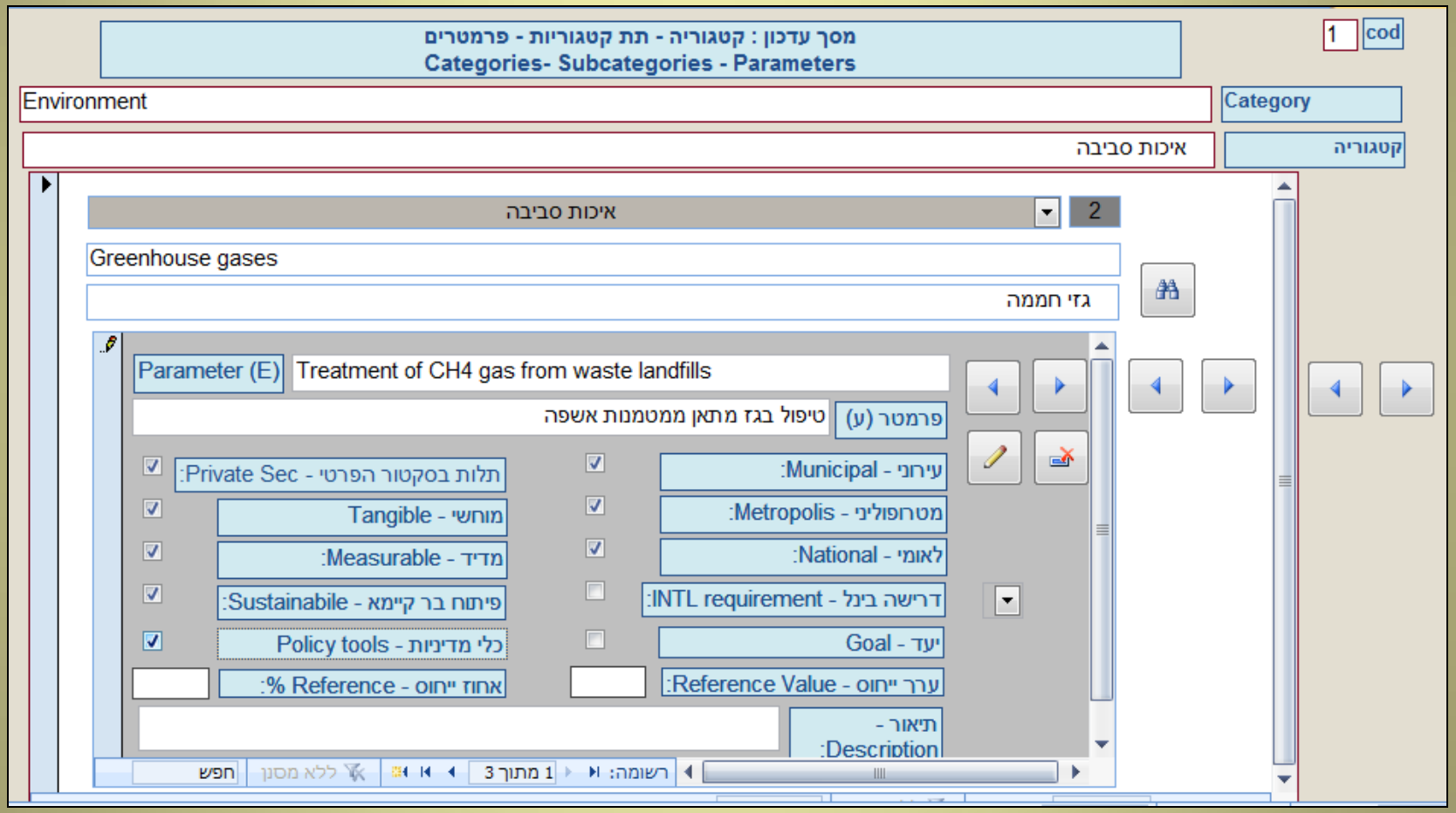
code catego	category	categoryH	חדש
1	Environment	איכות סביבה	
2	Energy	אנרגיה	
3	Water and Sewage	מים ושפכים	
4	Mobility and Transportation	תחבורה ותעבורה	
5	nformation and Communication Technologies	מערכות מידע ותקשורת	
6	Living	איכות חיים	
7	Governance	מימשל	
8	Economy	כלכלה	
9	People	משאב אנושי	
10	Housing and Land Resources	דיור ושימושי קרקע	
11	Homeland security	בטחון פנים	
12	Emergency Preparedness	היערכות לשעת חירום	
(חדש)			

A dual-language (Hebrew & English) table of subcategories

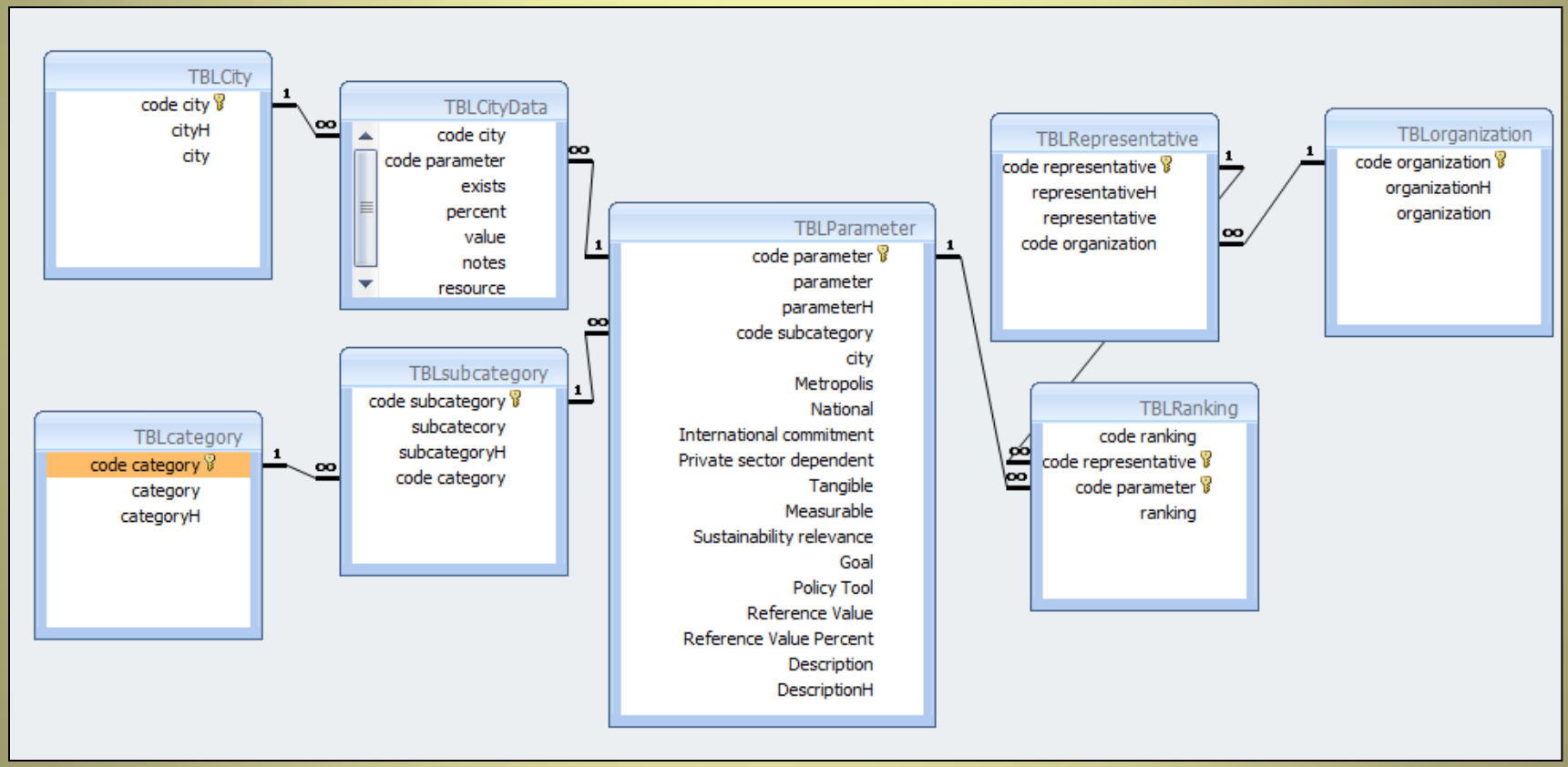
TBLsubcategory

code subcate	Sub Category	תת קטגוריה
1	Air pollution reduction	זיהום אוויר
2	Greenhouse gases	גזי חממה
3	Open and green areas	שטחים פתוחים וירוקים
4	Nature reservation	שמורות טבע
5	Noise hazards	מפגעי רעש
6	Sanitation and odor hazards	מפגעי תברואה וריח
7	Waste treatment, reduction and recycling	טיפול, מחזור והפחתת פסולת
8	Optimal use of natural resources in the urban sphere	ניצול מיטבי של משאבי טבע במרחב העירוני
9	Energy demand reduction	שימור אנרגיה והפחתת הביקוש
11	Load management	ניהול עומסים
13	Transportation fuel substitute	אנרגיות מתחדשות לתחבורה
14	Renewable energies for electricity production	אנרגיות מתחדשות ליצור חשמל
15	Coordinating energy, water and sewage sectors	שילוב משק האנרגיה עם משק המים והטיפול בשפכים
16	Water supply side management	ניהול צד ההיצע למים
17	Water demand side management	ניהול צד הביקוש למים
18	Waste water treatment	טיפול בשפכים
19	Using urban water flowing	ניצול נגר עירוני
20	Allocating water for nature needs	הקצאת מים לצרכי הטבע
21	ICT systems for transportation	מערכות מידע מתקדמות לתחבורה חכמה
22	Traffic and parking arrangements	הסדרי תנועה וחנייה
23	Public transportation lines and cards arrangements	הסדרי כרטיסים וקווים בתחבורה הציבורית
24	Vehicle and fuel standards	תקני פליטה לרכב ולתשומות דלק
25	EV and hybrid supporting infrastructures	תשתיות תומכות רכב חשמלי והיברידי
26	Public transportation load management	ניהול עומסים בתחבורה הציבורית
27	Accessibility	נגישות נכים

an interface to standards smart cities in Israel
A dual-language (Hebrew & English) screen for updating categories, subcategories and specific parameters



Linkages between the database tables such as – Category, Subcategory, Parameter, City-Data or Ranking



Water Technologies in Israel – an example for Sustainable Green Industry, Green Economy

- Israel located on the edge of the desert, about 60% of its territories are desert. We suffered severe water shortage, but no more.
- A government decision to put end to this situation led to development of water technologies.
- We learn to conserve water, manage uses of water, decrease leakage, decrease the uses of water for industry, agriculture and domestic uses, recycle, reuse and recently desalinate sea water.
- Water and Energy Food Nexuses.
- There are more than 170 companies that have solutions to all what need to solve the problem of water and makes money out of it.
- The water tech in Israel export in 2012 was 2.5 billion US$ and it is increasing, by 2020 it is estimated to be 4 billion US$.

Energy Conservation

- As in water, until recently, we used to import about 97% of our energy. Although we are rich with solar radiation (about 300 sunny days a year), although we were the first and the only country for many years that used solar installation (85% of all households), the use of renewable was limited to that.
- Energy conservation was at the Israeli agenda since 1983, with energy conservation we manage to decrease primary energy per capita by 5% in the last 6 years by that time our GDP grew by 9.6%
- In 2010 a national program to reduce electricity consumption by 20% until 2020 was published and since majors activities were taken.

- We were and still involve in may project on the demand side. Having use NG for electricity production increased efficiency by 25% on the supply side as well.
- With the expansion of the use of NG we promote the use of NG in cities, new neighborhoods, industrial zones, hospital hotels and others.
- A project of Co-generation to supply a hall resort area (13 hotels) by the Dead Sea, with district heating cooling and electricity is now discussed.

International Cooperation

- The state of Israel decided to prefer relevant international standards (ISO, EER,).
- Israel is cooperating with other countries and international organizations in order to share its best practices and knowledge, as well as to learn how others are approaching and facing similar development issues.
- We hope to expand our collaboration, and continue learning new best practices, as there is no "one size fits all" solution.
- We call upon global High-Tech companies to take part in promoting smart-cities projects in Israel.
- It is our responsibility to present our leaders with new and innovative ways to meet the challenges of the 21st century urbanization.

Thank you for Listening

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