



DURA

Razvojna agencija Grada Dubrovnika
City of Dubrovnik Development Agency

CITY OF DUBROVNIK

Head of the office, DURA



EE INFO

Info ured za energetska efikasnost
Energy Efficiency Info Office



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ABOUT US

- City of Dubrovnik Development Agency DURA Ltd. is a professional and non-profit organization established by the city of Dubrovnik in 2010. with primary aim to prepare and implement projects financed by EU and other funds
- DURA offers individual advisory service for preparation of projects in reference to tourism, SME's, civil society, culture, energy efficiency, sustainable mobility and protection of the environment.
- The Agency represents a union between the city and other institutions and organizations relevant to sustainable local development.



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OUR SERVICES :

- Providing technical support for preparation of projects financed by EU funds
- Preparation of project proposals financed by national funds
- Management and coordination of projects
- Providing support for start-ups
- Education
- One stop shop for investors



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poduzetništva
u Gradu

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CITY OF DUBROVNIK

- UNESCO protected site since 1979
- 42.615 inhabitants
- In 2013 over 2.2 mil visitors (1.4mil from cruise ships)
- The most southern city in Croatia
- Annual budget of cca 55 mil EUR
- 21.35 km2 size
- City founded in 7th century
- Rich history, independent maritime Republic from 1358 – 1808
- Twin city with Venice since 2013, fierced rival ☺



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PROJECTS

FINISHED – SUSTAINABLE TRANSPORT

- **BIOSIRE** – Creating sustainable transport in tourism regions
- **ADRIA.MOVE.IT!** – Support to sustainable forms of mobility in towns
- **LIBERTAS „Eco drivers”** – Public transport company „Libertas” has certified it's 120 drivers as eco
- **I-RESEV** - ICT-supported integration of electric vehicles into the power systems with a high share of renewable energy sources



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PROJECTS FINISHED – EE & RES

- **N.A.P.** (Network of Adriatic Parks)
- **B.A.R.C.A.** “In the Adrias Kolpos”
- **SGE** – Systematic energy management in cities and counties of the Republic of Croatia
- **SOLAR ROOF on public pool of VK Jug** - documentation
- **MASTER PLAN** for the establishment of a hotel chain by the recovery and restoration of historic buildings in Dubrovnik



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PROJECTS

COMPLETED - PUBLIC LIGHTING

PARK BATALA of 2014

Solar Street Lights
No power consumption
First the DNC, 100% ecological

New solar lighting with 12 watt LED lamp (3 x 4W per lamp)
Tubular PV installed on poles (output 69W)
Battery 36 Ah



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INTERNATIONAL PROJECTS IN PROGRESS

- **ADRIACOLD** - Diffusion of refreshing and cooling technologies using solar energy in the Adriatic regions
- **EX.PO.AUS** – EXtension of POtentiality of Adriatic UNESCO Sites



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STIMULATIONS FOR CITIZENS – DURA & City

RES (renewable energy sources) for households

Co-financing the installation of solar collector system in households

78 incentive distributed, the total value of 315.000 €. (145.000€ incentives)

EE (energy efficiency) for households

Co-financing of energy efficiency measures in households

35 households approved, the total value of 5mil. £ (£ 1.2m boost)

ENERGY CERTIFICATION OF PUBLIC BUILDINGS

DURA building the first certified building in Dubrovnik through the stimulations of the National fund (the Summer Games and Sports Hall next)

Over 400 UNESCO protected buildings



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- **ADRIACOLD** - Diffusion of refreshing and cooling technologies using solar energy in the Adriatic regions

FIRST SOLAR PILOT PLANT FOR COOLING IN DUBROVNIK OPEN ON MAY 13 2014





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- **COST OF PILOT PLANT 916.630 HRK or 123 600 EUR**
- 17,5 kW for cooling
- 25 kW for heating
- Yazaki – Maya model WFC SC5
- Chilled water 6-12 C
- Solar collectors 65m²
- HEAT PUMPS 16.11kW (pre-installed, works occasionally)
- At least 5 months of cooling May-Oct



LOCAL PROBLEMS FROM CITIZEN'S PERSPECTIVE

- **TRAFFIC CONGESTION** – Large traffic blocks occur on a daily basis during summer months
- **NOISE POLLUTION** – Lots of complaints received from citizens about loud sounds originating from night clubs, cafes and events
- **INFORMATION DEFICIT** – Information about events and important local news are not absorbed by the citizens in time available (e.g. Available subsidies, resources, events...)
- **TV & RADIO SIGNAL INTERFERENCE** – During clear days it is impossible to receive TV & radio signal for lots of citizens due to interference
- **GAPS IN GSM COVERAGE** – There are lots of gaps in GSM signal coverage, especially in rural regions



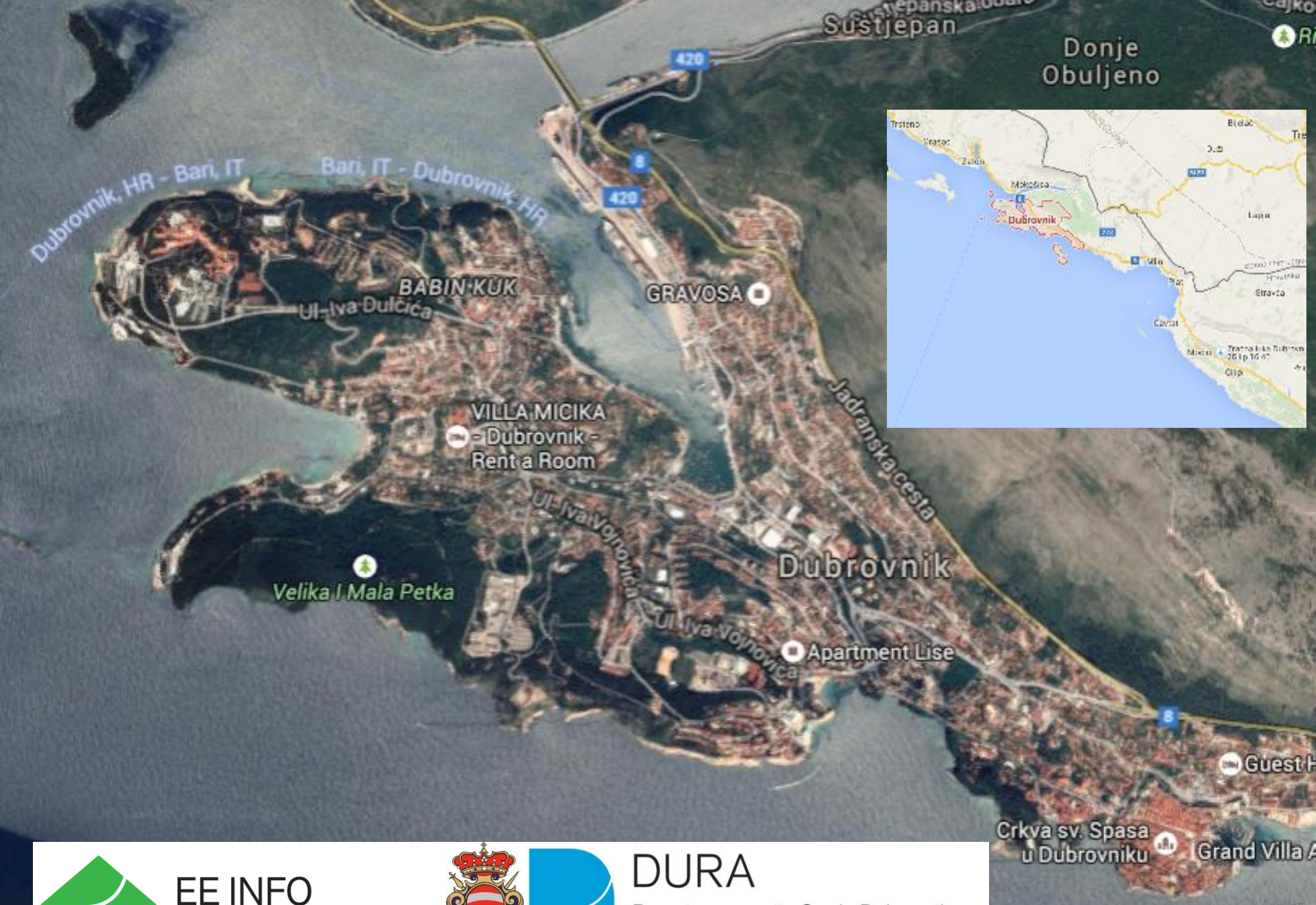
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PROJECTS

Planned for 2015/2016

PUBLIC LIGHTING

- Solar public lighting on Elafiti Islands – 13 solar LED poles
- PUBLIC LIGHTING - Total 14.5km to be replaced with LED, total power 254kW
- First SMART CITY pole installed in April 2015.



RES and EE projects

- SOLAR ROOF on public pool of VK Jug
- Renewable Rector's palace – heat pumps using sea water



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PROJECTS

Planned for 2015/2016

SUSTAINBLE MOBILITY

- **eBus Libertas** - the introduction of electric buses in the public transport
- **REENGO Dubrovnik** - Sharing system for electric vehicles in Dubrovnik
- **Smart traffic lights Lapad** - update old equipment with new EE
- **Electric cars charging stations** – 40 stations to be installed
- **Cable car** from Port Gruž to Srđ mountain
- **Dubrovnik Walking subway** – EE walking subway from Port of Gruž to Pile gates



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GREENGO Dubrovnik - Sharing system for electric vehicles in Dubrovnik

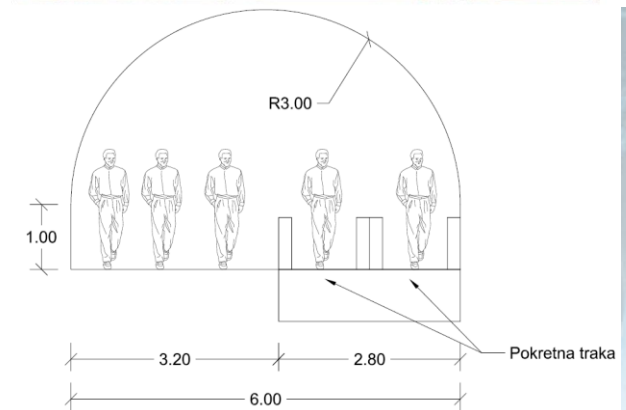
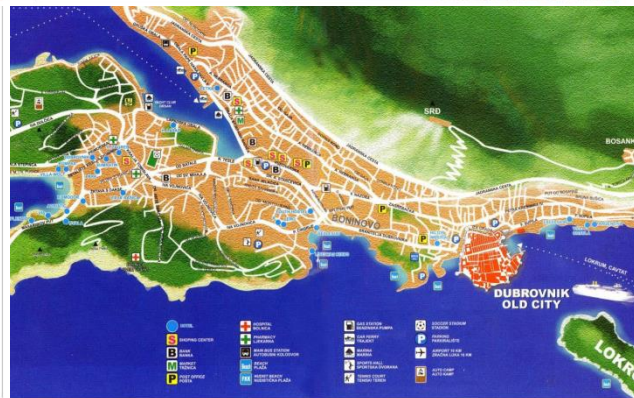
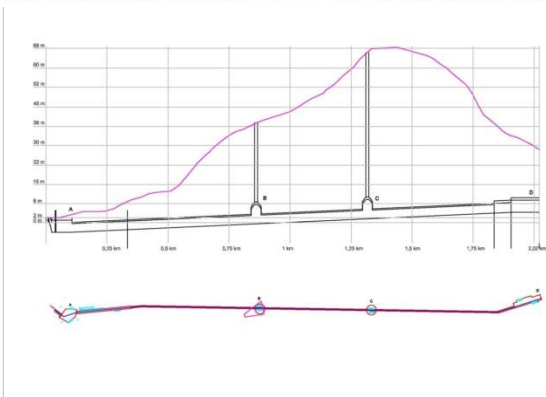
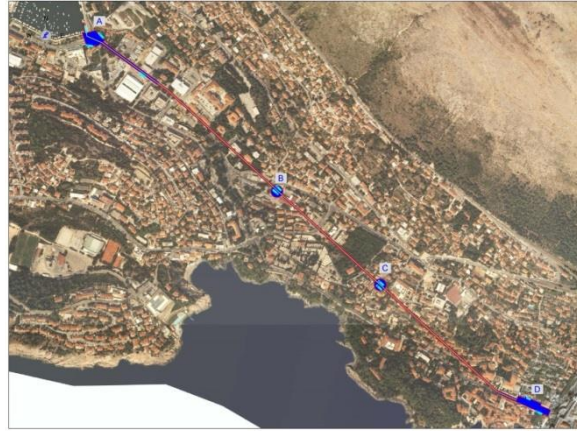
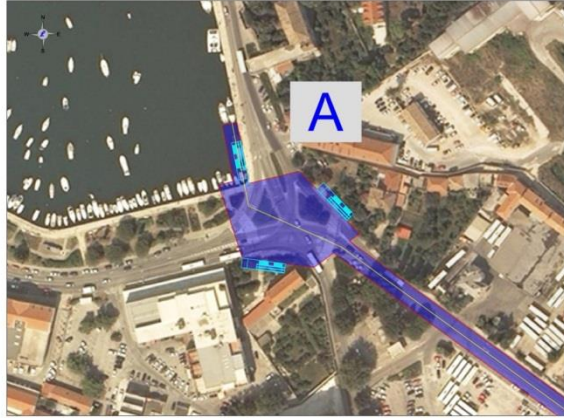
- 100 electric scooters up to 5kW in network of 16 stations at city centre
- Zero emissions
- Sharing model for both citizens and visitors
- Reduction of public traffic up to 8%
- Promotional effect
- GPS, software, smartphones, video cameras, online reservations, app store, etc...
- User firendly



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- **Dubrovnik Walking subway**
EE walking subway from Port of Gruž to Pile gates



LUCI CONFERENCE DUBROVNIK

- Established in the year 2002 on the initiative of Lyon
- Association LUCI brings together over 70 world cities and 600 world experts for public lighting in order to exchange experiences in the use of light as a major tool for urban, social and economic development of cities, with special emphasis on energy efficiency and the impact of lighting on the environment
- The city of Dubrovnik the only member from the Republic of Croatia
- Prestigious conference
- Dubrovnik from 2014 member of the Executive Board



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STRATEGIC DOCUMENTS

- **DUBROVNIK SmartCity 2020** - [link](#)
in cooperation with partner consortium (Deutsche Telecom, IBM, CISCO and DELOITTE) making the first Croatian SmartCity strategy at the very least, held a series of workshops and meetings - in 2015 the adoption of the City Council and the first pilot projects
- **ENERGY EFFICIENCY IN LOCAL TRAFFIC**
in cooperation with the Faculty of Traffic Engineering to be developed –EE traffic of City of Dubrovnik
- SEAP (Sustainable Energy Action Plan) – to be completed by end of 2015
- **Agreement City of Dubrovnik – HEP (National electric provider)**
Production of the first e-filling stations in public parking lots in 2015



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