



GREENING  
THE ISLANDS

## OBSERVATORY ISLAND MEETING

Crete/Greece | 28<sup>th</sup> February & 1<sup>st</sup> March 2019

Connecting an island and enabling internal discovery  
while respecting the environment – best practices

David Bonn

in association with



ΠΕΡΙΦΕΡΕΙΑ ΚΡΗΤΗΣ  
REGION OF CRETE

## My background

- Background in process control engineering in food, water, mining and energy before moving into Mobility,
- Involved in the delivery of mobility solutions for towns, cities and regions internationally for over 30 years,
- Head of Intelligent Transport Systems (ITS) and Smart Cities for Mott MacDonald Ltd, a major UK-based international Consultancy,
- Supporting the growth and development of start-up and SME companies in Mobility market.
- I live on west coast of Scotland and regularly sail over to the many local islands.

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## Best Practice - The «SIMPLE» Approach to Sustainable Mobility

Sustainable Mobility is an approach to delivering and managing transport in a region that supports practical, low pollution, environmentally friendly mobility options, as well as the living environment to enhance the quality of local life.

*S*ustainable

*I*ntegrated

*M*obility

*P*lans for

*L*ocal

*E*nvironments

Keeping it *SIMPLE* always delivers

## The SIMPLE Approach

**Sustainable** – able to meet today's needs without compromising the quality of life of future generations while using the earth's resources in a way that ensures its availability for future generations. Its not a one-off quick fix solution.

**Integrated** – the outcomes in the Plan associated with Mobility should be compatible and integrated with the outcomes for the other elements within the Island's Sustainability Plan such as water, energy, health etc.

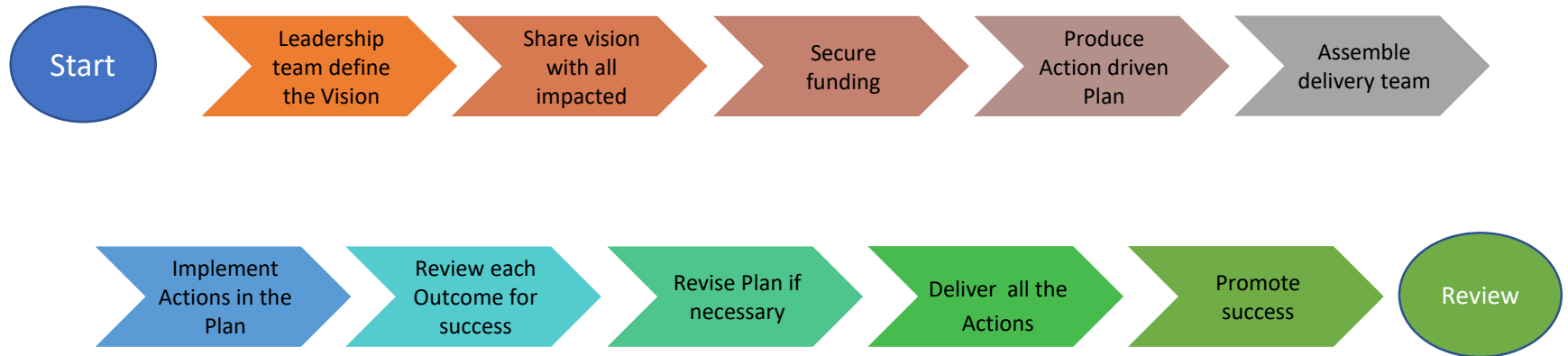
**Mobility** - is the ability of people and goods to be transported in a way that respects Safety and the Environment, ensuring fairness amongst all users.

**Plans** – a documented location-specific Vision of time-bounded Outcomes to deliver Mobility in a sustainable way without compromising the quality of life of its users.

**Local** – the Actions deliver Outcomes target at the needs of the local region, delivered by local inhabitants, benefiting the locals, with the full engagement of the locals.

**Environments** – Mobility solutions must be appropriate for the physical environment they are to be deployed in to ensure suitability for all users.

## The Planning Approach



- Define what success will look like at the start of the journey,
- Not all Plans are delivered in the same timescales,
- The Outcomes of each Plan are unique to the location,
- Outcomes can be delivered in phases and in parallel,
- Reviews of Outcomes must be honest.

## What needs to be put in place to deliver success

- A **Leadership team** with the necessary expertise to drive the outcomes expected,
- **Local involvement** – before, during and after,
- **External support** – specialist expertise as required,
- **Experienced delivery team** – able to implement the required Actions to deliver the Outcomes,
- **An adequate budget** - financial monitoring of assigned budget,
- **Independent technical reviewer** - monitoring of progress and Outcomes.





## Areas to be targetted: *examples*

Need	Scale	Constraints
Tourist movements (hotel pick-up & drop off) (sightseeing tours)	Large seasonal volumes,	Road surfaces, Charging infrastructure,
Local industry needs (farm vehicles) (heavy freight movements)	Used to support local produce	Not suited to standard vehicle formats,
Vehicle hire services (taxi)	Driven by connecting transport during high season	Move away from individual hire to ride sharing
Self drive hire (electric car) (e-bicycle/scooters) (boats)	Seasonal	Road surfaces, Damage, Speed limits and Safety concerns Overnight charging when no solar power available, Failure to charge.
Local resident use	Based on population needs	Financial barrier to replacing with new

## The Mobility Options for Crete

- Who are the target users?
  - Tourist services
    - Bus
    - Chauffeur services
    - Hire cars
    - Scooters
    - Bicycles
  - Public transport services
    - Local bus services
  - Local business needs
    - Farmers
    - Delivery services





## Public Transport – Alternative Fuel Options

- Tourist bus services
  - Electric buses
  - Hydrogen buses
- Private Hire Buses
  - Electric
- Hire Cars
  - Electric
- Scooters
  - Electric
- Tourist boats
  - Solar powered
- Bicycles
  - Electric



## Mobility for local users

- Public Transport bus services
  - Electric buses
  - Hydrogen buses
- Farmers
  - Electric vehicles
  - Biodiesel
- Delivery service providers
  - Electric vehicles
  - Biodiesel
  - Hydrogen



## Alternative fuel challenges

- Electric charging
  - The challenges
    - Island wide charging infrastructure required,
    - Large charging demand when solar energy at it lowest,
    - Crete has many areas where local power lacks required capacity,
    - Cost of vehicle change may be too much for quick deployment.
  - The opportunities
    - Integrated energy / transport strategy for the island,
    - Increase in eco tourism on the island.

## Alternative fuel challenges

- Use of hydrogen fuel cells
  - The challenges
    - Island wide distribution, storage and refuelling infrastructure required,
    - Large demand on energy to create fuel,
    - Replacement vehicles (engines only for newer vehicles),
    - Cost of vehicle change may be too much for quick deployment.
  - The opportunities
    - Part of integrated energy strategy for the island,
    - Local manufacture of Hydrogen fuel,
    - Expand in due course to other vehicles types including freight vehicles.

## Alternative fuel challenges

- Use of biodiesel
  - The challenges
    - Island wide distribution, storage and refuelling infrastructure required,
    - Collection and storage of raw materials,
    - Public perception means vehicles not acceptable in towns.
  - The opportunities
    - Part of integrated energy strategy for the island,
    - Local manufacture of biodiesel as part of a waste management strategy,
    - Reduce cost of importing fuel,
    - Could be used to power emergency power generation.

## Vehicle charging challenges

- Electric vehicles
  - Multi-storey car park at airport / ferry port
    - PV cells on roof of car park combined with battery storage to charge cars when awaiting hire,
    - Ability to charge taxi / cars / minibus when off-hire,
    - Covered parking at places of interest that provide PV charging capability for vehicles.
  - Scooters
    - Network of battery charging / exchange stations at taverna's around the island.



## Tourist Mobility made easy

- The “Crete app” provides location based information of interest to tourist while also providing opportunity for local businesses to promote their offerings,
- Publish local transport timetables and using bus tracking technology show where the buses actually are on their planned route,
- Highlight preferred routes to major tourist attractions updated to show reported problems by providing an alternative route,
- Ferry timetables published,
- Ability to book travel through the app including taxis, bus, ferry and hire vehicles including cycles, scooters etc.



## Tourist Mobility made easy

- Paying for goods and services is achieved using an “Crete OneAccount card” linked to a bank account or to an electronic purse.
- Payments for bus, e-bike hire, access to electric charging, taxi, food, ferry tickets all use same approach to remove need for cash.
- Mobility pre-trip bookings are made through the “Crete app” and are taken from the Crete OneAccount.
- All available for hire transport modes are equipped with information systems, tracking and are WiFi enabled.



## In Summary

- There are endless Mobility options, some appropriate, some deployable today – set your Vision then define what you will implement.
- Do a Business Review of the overall Vision to ensure the Outcomes are financially beneficial and meet your Sustainability targets.
- Share the Vision with the locals to get their support for the Vision as it will need then to make changes in how they live and work too.
- Obtain agreement on the available financing – seek support for “proof of concept” deployments to reduce costs.
- Be bold and believe in what you are trying to achieve.

Keep it **SIMPLE** and deliver

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# Thank you

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