



greenea

Making Eco-Developments Happen

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OVERVIEW

grenea assures zero emission developments at competitive costs with conventional real estate thereby maximizing the IRR for investors

grenea applies the experience and knowledge gained from large Eco-projects to develop Eco-communities globally. By introducing streamlined, cost effective, Eco-friendly and innovative construction systems, **grenea** undertakes to minimize development cost and maximize IRR for investors while achieving zero emission developments.

Each project engages innovative technology companies and developers committed to meeting the sustainability targets and enhancing the commercial value of the real estate.

grenea is a pioneer of new sustainable business models that ensures the viability of the developments. Specific business models or combinations offer flexibility depending on project scope.

Increasing urbanization and growing political support, regulation and incentives are creating a vibrant market. Eco-developments offer diversification within the green sector.

Developments include many emerging opportunities from renewable energy, green technology and zero carbon solutions. Eco-developments answer the demands of socially responsible investors. Diminishing natural resources and higher prices are forcing companies and governments to adopt new strategies that favor the green sector, a nascent industry with huge growth potential.



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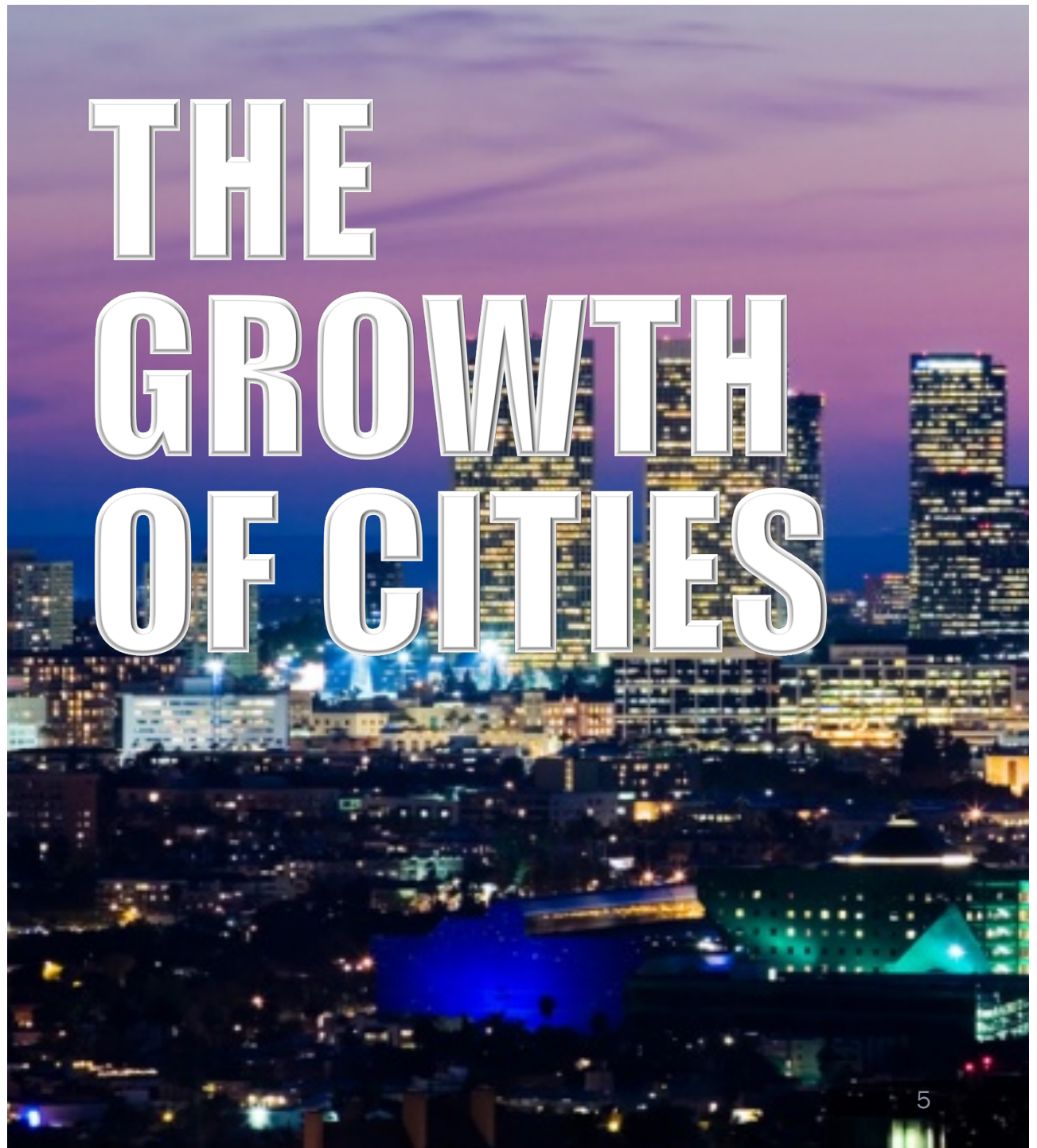
To provide the highest quality of life to citizens, a positive environmental footprint to real estate developments and the maximum value of property to investors



Half of the world's population lives in cities. The urbanization rate, which was just below 30% in 1950, rose above 50% in 2007. Urban population to double by 2050 to 6.4 billion (70%).

Key Facts

- Rapid urbanization creating high stresses for many Asian cities, driving the construction of hundreds of new cities
- Asia to become 50% urban in the next 15 years
- 1.2 billion cars expected on the road by 2015 (circa 1 car for every 6 people)
- Underinvestment in developed world cities: new urban infrastructure required (41 T\$ needed by 2013)
- Rise of “new” cities (Masdar, New Songdo City, GIFT, Lavaza, Iskandar, KAEC)
- Top 100 urban agglomerations currently accounting for 25% of worldwide GDP
- 95% of the world's cities still dumping raw sewage into their waters
- Cities occupy just 2% of the world's landmass yet consume over two-thirds of the world's energy
- Cities account for more than 70% of global CO₂ emissions
- In cities, buildings can account for up to 80 percent of CO₂ emissions.



WHY REDUCE CO₂

Global emissions of carbon dioxide will grow by 43 per cent by 2035 if current patterns of energy usage continue and no global restrictions are applied.

1- Climate change

- The effect of all this extra carbon dioxide is that the overall temperature of the planet is increasing.
- Whilst the average global temperature is increasing, on a day-to-day level the climate is changing in unpredictable ways (from floods and hurricanes to heat waves and droughts).
- To try and reduce the risk of ever more extreme weather, we need to reduce how much fossil fuel we are burning. This isn't easy.

2- Resource conservation

- CO₂ is a measure of inefficiencies and wastefulness. By reducing CO₂ emissions we would be maintaining the planet resources
- If continued to be consumed at the current pace, our earth resources will not be able to cater for a world population of 9 billion by 2030

3- Quality of life

- CO₂ is a measure of pollution and unhealthy environment. By reducing its emissions we would be creating a healthier lifestyle, a cleaner atmosphere



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Since cities are the main emitters of CO₂ then Eco-developments must become a priority:

A report put out by the tri-national (US, Canada and Mexico) Commission for Environmental Cooperation has determined that creating green developments would do **more for the environment than any other single measure.**



Technology that is already available and being implemented across the world could reduce the amount of CO₂ produced by developments by 1,800 megatons per year.



ECO-DEVELOPMENTS



An Eco-development is an urban space built to meet the highest standards of sustainability

Eco-developments employ low and zero carbon technologies as a key part of their design. State-of-the-art recycling and water systems plus a clean and effective transport system, connected with public transport create a user friendly and healthy environment.

Smart IT infrastructure and innovative technologies are encouraged in Eco-developments. Inhabitants of Eco-developments (or Eco-citizens) look for a high quality of life, a healthier lifestyle and a cleaner environment.

Eco-developments can offer citizens growing savings on utilities bill, better assurance on the quality of building and infrastructure, better mobility and a potential for higher productivity.

A development at regional and local levels, consistent with the potentials of the area involved, with attention given to the adequate and rational use of natural resources, technological styles and organizational forms that respect the natural Ecosystems and local social and cultural patterns.

Source: OECD

Eco-developments encourage efficient resource management and utilization. Eco-developments produce long term building and infrastructure assets which can have meaningful impact on reducing CO₂ emissions.

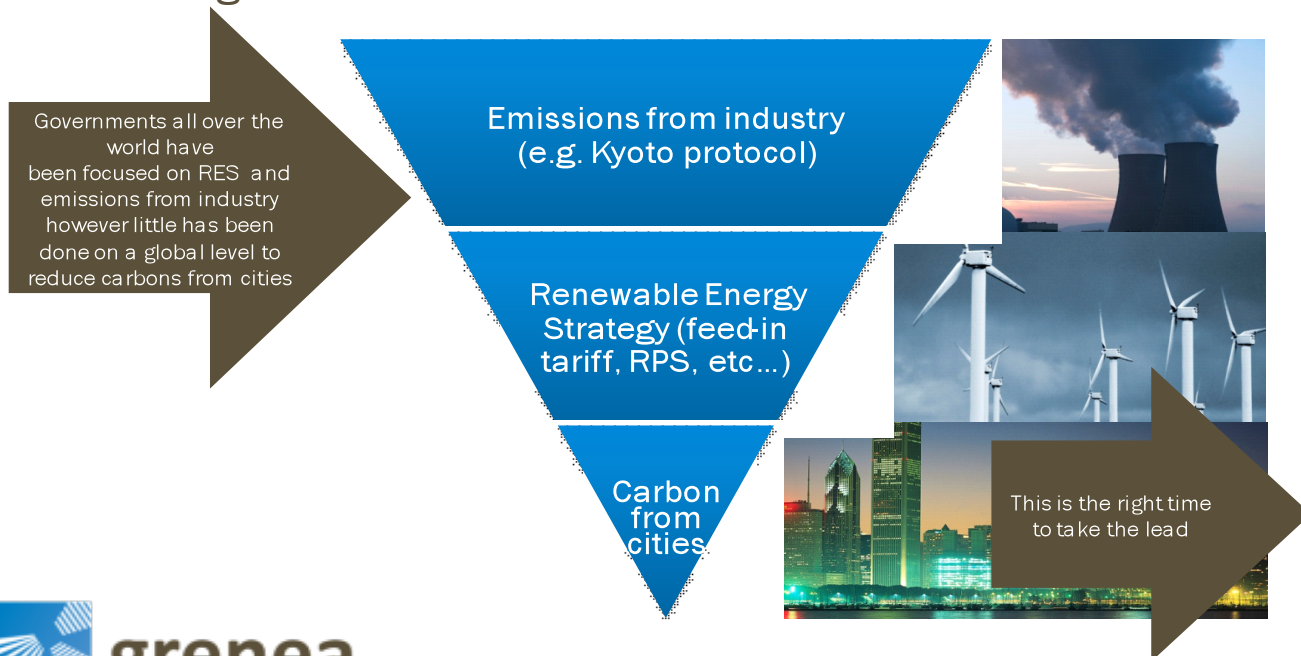
They offer the potential for significant economic impact with the growth and creation of Green jobs. Compared to traditional developments they offer the opportunity for differentiation resulting in a higher value for the developed assets.

Drivers for Eco-developments

- New legislation and targets to curb carbon
- Improved and healthier quality of life
- Trend for more sustainable use of fragile earth resources
- Significant, yet untapped market opportunity
- Positive social and environmental impacts

GOVERNMENT FOCUS

Governments have finally come to the realization that something has to be done



Future legislation will force zero or new limits of emissions from buildings . New legislation and targets to curb carbon is evident in a large number of government driven projects globally. As well as offering solutions for an improved and healthier quality of life these initiatives are sensitive to the trend for more sustainable use of fragile earth resources.

To date government initiatives have focused on industry and renewable energy. However, a realization that cities are responsible for more than two thirds of the worlds energy consumption has led to increased government focus. Positive social and environmental impacts and increasing urbanization are major factors in the growth of government led initiatives.

Each year as much as \$100 billion is spent by governments and consumers around the world on green subsidies designed to encourage wind, solar, and other renewable-energy markets. Similar incentives are expected for Eco-developments providing green alternatives to urban living.

ECO-INITIATIVES

The 2000 W society challenge

Identification of the major technological breakthroughs to reduce the per capita primary energy use of Switzerland by two thirds within five decades.



Energie-Cités

Represented in 24 countries, over 500 local authorities promote energy efficiency, renewable energy and distributed generation with three primary objectives:

- Strengthen role of local authorities
- Represent their interests and influence decisions at European level
- Encourage exchange of know-how



San Francisco, California

San Francisco is a hub for eco activism. Over the years the green initiatives in San Francisco have proven the city's dedication to green living.

- In 2008, the city claimed the largest solar power program in the country.
- This along with the number of green houses, cars and eco friendly businesses make San Francisco one of the greenest places in the US.



The Covenant of Mayors

An initiative to encourage European cities to mitigate climate change through local sustainable energy policies that create stable local jobs and increase citizens quality of life and address crucial social issues.



Europe 20-20-20

In 2009 the EU adopted a wide-ranging package on climate change.

- 20% cut in greenhouse gas emissions by 2020
- 20% increase in use of renewable energy by 2020
- 20% cut in energy consumption through improved energy efficiency by 2020



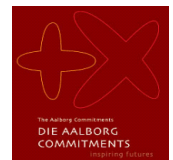
EPA Green Building Strategy

Launched in 2008 to enhance coordination of these programs towards the overall goal of facilitating the mainstream adoption of effective green building practices.



Aalborg Commitments

The Aalborg Commitments are a set of shared commitments to be jointly implemented by Local Governments across Europe.



Leipzig Charter

The Leipzig Charter contains two key policy messages:

- Integrated urban development applied throughout Europe and, in order to be able to do so, the appropriate framework for this should be established on a national and European level.
- Deprived urban neighbourhoods must increasingly receive political attention.



EXAMPLE CITIES

There are over 30 new Eco-cities in development around the world today and over 15 cities with extraordinary plans for Eco-retrofitting.

Almost all major cities in the world today are looking at sustainability aspects when considering new constructions and developments especially in the education, government, institutional, office and health care sectors. Europe, the US and Australasia already have established sustainability markets with substantial focus on building green. Their building rating schemes have experienced aggressive growth in the number of certifications in recent years and this trend is only expected to increase in the near future. Asia, including China and India, is seen to be the biggest green market in the short to medium term.

Apart from renewable energy sources, sustainable materials, better construction practices and innovative technologies that conserve energy and resources are among the top themes in the green building marketplace. Product manufacturers that have a developed sustainability strategy, and can demonstrate the environmental performance of their products, will have a clear advantage over those that do not and this market differentiation, according to experts, will markedly increase within the next five years.

Examples include:

Logroño Montecorvo Eco City, Spain :

- Designed by MVRDV in collaboration with GRAS foresees the construction of 3,000 social homes and complementary program.
- The new neighbourhood achieves a CO₂ neutral footprint by producing renewable energy on site.
- The total investment is 388 million Euro.



Tianjin Eco City - China:

- 50:50 joint venture between a Chinese consortium led by Tianjin TEDA Investment Holding Co Ltd and a Singaporean consortium led by the Keppel Group



Masdar City - UAE:

- The first city to claim carbon neutrality, zero waste.
- The city plans to rely entirely on solar and other renewable energy sources, with a sustainable, zero-carbon, zero-waste ecology.
- The city is being constructed 17 kilometres east-south-east of the city of Abu Dhabi, beside Abu Dhabi International Airport.



MASDAR CITY



Masdar City is a Sustainable City aiming to provide the highest quality of life with the lowest environmental footprint. Developers have taken inspiration From traditional Arabian Cities



Masdar City Fast Facts

Total Site Area:	700 ha
Large Square:	225 ha
Small Square:	55 ha
Supporting Infrastructure:	45 ha
Landscape:	375 ha
Resident Population:	40,000
Commuters:	50,000
Residential Density:	140 People/Hectare
Peak Daily Density:	245 People/Hectare



A case study

Established in April 2006, Masdar is a multi-faceted company advancing the development, commercialization and deployment of renewable energy solutions and clean technologies. Masdar integrates the full renewable and clean technology lifecycle -- from research to commercial deployment with the aim of creating scalable clean energy solutions. Masdar works with global partners and institutions to integrate new research with proven technologies to produce efficient systems and processes that can be replicated globally.

Suppliers to Masdar City :

- Have a vision and practices that support Masdar City and its goals
- Outperform Masdar City's sustainability requirements
- Be developers of innovative, Eco-friendly products
- Demonstrate the Eco-friendliness of their products
- Maintain a cost-effective balance with their products profile
- Show commitment to sustainability and constant improvement

Suppliers benefit by:

- Directly boosting growth and profit
- Unspoken statement of competitiveness and quality
- Incomparable visibility in the Global Sustainability Market (see page 8 for an overview of Eco-cities currently in development around the world) and a bolstered Corporate Look
- Being compelled to look "inward", improve processes and innovate leading to increased medium--term cost savings and productivity

INVESTMENT IN ECO- DEVELOPMENTS



The built environment has a vast impact on the natural environment, human health, and the economy. By adopting green strategies, we can maximize both economic and environmental performance. As a young and small sector the growth potential is large.

Potential benefits of green developments include:

Environmental benefits

- Enhance and protect biodiversity and ecosystems
- Improve air and water quality
- Reduce waste streams
- Conserve and restore natural resources

Economic benefits

- Reduce operating costs
- Create, expand, and shape markets for green product and services
- Improve occupant productivity
- Optimize life-cycle economic performance

Social benefits

- Enhance occupant comfort and health
- Heighten aesthetic qualities
- Minimize strain on local infrastructure
- Improve overall quality of life

Supported by long-term economic trends and increasing demand for zero carbon solutions investors in Eco-developments can expect a potential IRR of greater than 15%.

Increasing urbanization and growing political support, regulation and incentives are creating a vibrant market. Countries around the world are imposing strict environmental targets on companies and consumers.

Eco-developments offer diversification within the green sector. Developments include many emerging opportunities from renewable energy, green technology and zero carbon solutions

Eco-cities answer the demands of socially responsible investors and since diminishing natural resources and higher prices is forcing companies and governments to adopt new strategies that favor the green sector.

Until recently the business case has been unclear to investors

Barriers to Investment:

- Developer has no direct incentives => "Greenwashing"
- No monetary value for reduced CO₂
- Developers looking for quick exit
- No one taking the role of an integrator
 - Large numbers of small projects
 - Many technologies promoted by different vendors
 - Many end-use sectors: industry, commerce, residential, agriculture, etc.
 - Diverse approaches: replacement, retrofit, extension, greenfield
- Consumer unsure about real savings
 - Low consumer awareness in emerging economies
- Lack of attention to environmental issues
- Common belief that sustainability requires subsidies
- Government response to real estate issues is slow

The role of Integrator

- The role of the "Integrator" is to accelerate the promotion and implementation of Eco-projects.
- The Integrator crystallizes the value proposition for the different project stakeholders
- The role is key in setting the financial and sustainability parameters



- » **grenea** studies the project, sets the investment criteria, engages the right technology companies and invests in the project.
- » **grenea** works closely with the developers and promoters of projects to ensure that meeting the sustainability targets will enhance the commercial value of the real estate.
- » **grenea** will set-up the business model allowing the various project stakeholders, the city council or government to benefit financially and economically from the embedment of sustainability parameters.



grenea specializes in the advancement of Eco-developments through:

- Direct investment in the project and with the developer
- Direct participation in the development cycle to optimize project value
- Developing and investing in the technology partnerships for the project

grenea invests mainly in mixed use developments

- We study and develop the business model
- We participate in equity in these projects
- We are currently looking at several projects in the US, Malaysia, Montenegro and Qatar

grenea's role generally starts at the planning stage of greenfield projects and takes an active role in refining concepts, master planning and development



grenea's mission is to make Eco-development mainstream in the global real estate and property markets.

Eco-efficiency

- Reduced material and energy needs
- Improved recyclability and waste reduction

Reduced carbon emissions

- Safeguard effects of future significant energy price increases
- Possibility of future carbon tax imposed on energy consumption

Eco incentives and accounting benefits

- Fewer regulatory requirements and greater ease in obtaining licenses to operate
- Reduced legal liability

Reputation and brand strength

- Innovative products and services
- Access to new markets.

To address the technical and financial challenges of developing “green projects”, the role of a development integrator should be introduced in real estate projects

Based on its unique and in-depth experience in planning Masdar City and executing the first phase, **grenea** will assume this role and provide the business model and appropriate financial, social, and environmental incentives to the various stakeholders

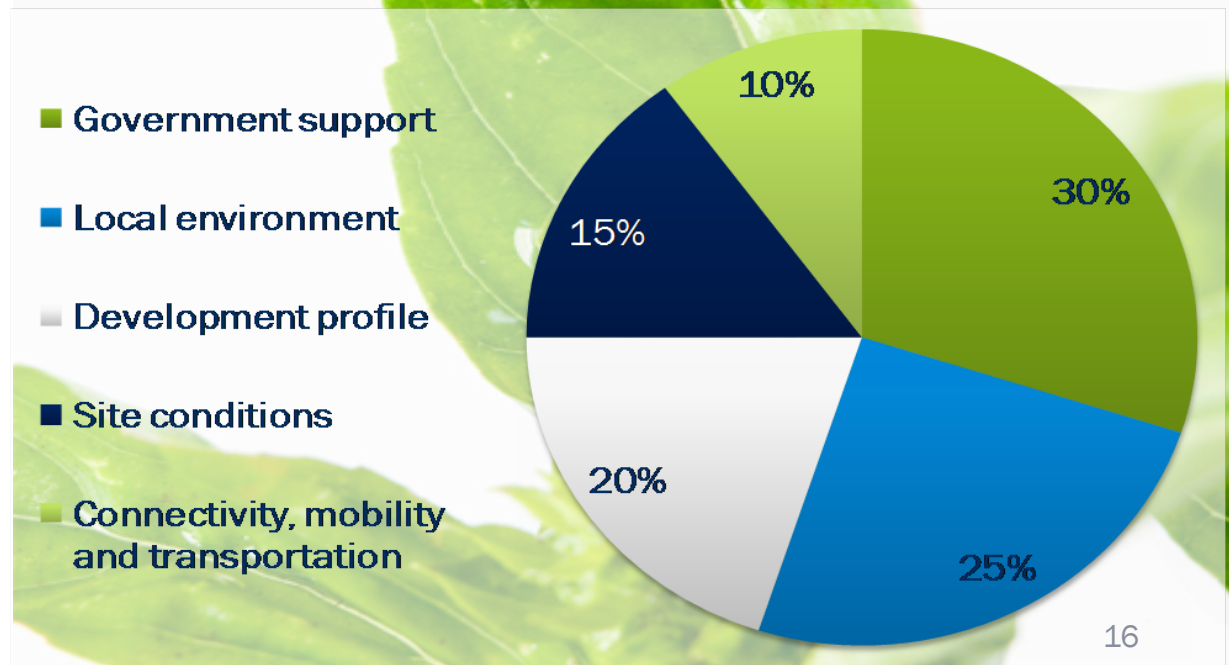
grenea will foster technology partnerships to enhance the property value, financial returns and sustainability targets of the project



These partnerships plus collaborations with the main pillars of the real estate supply chain will leverage the know-how and economies of scale in the various projects it integrates

By doing this, **grenea** aims to become an international business reference for Eco-developments and a globally recognized green property investment entity

THE SELECTION CRITERIA



BUSINESS MODEL

grenea operates through a number of business models depending on project scope and allowing for flexibility

1-Private equity: grenea's investment management team will raise and oversee the finance of a project:

- Develop project vision, brand and strategy, complete feasibility
- Develop investment packages and finalize deal structure
- Develop and maintain financial model
- Manage investors and financiers
- Optimize equity and cash injection
- Identify different streams for project finance
- Oversee the development progress
- Monetize excess energy and carbon savings to increase IRR
- Minimize cost and maximize IRR

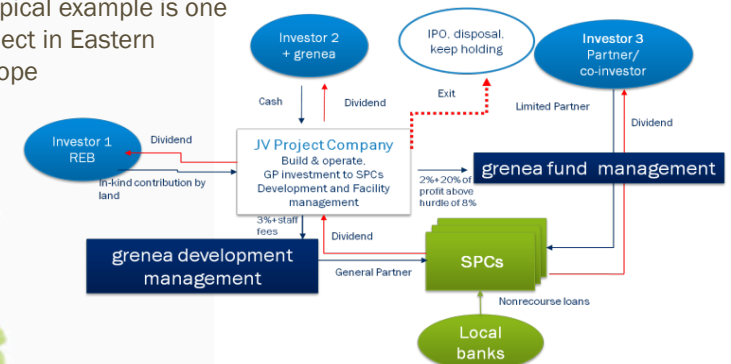


2-Development management: grenea's team of developers will be responsible for setting the development structure and execution:

- Manage the development of the Master Plan and the preliminary studies
- Optimize land use and phasing plan
- Develop sales and marketing strategy and associated collaterals
- Select PM and design firms, develop master schedule
- Oversee contracts management
- Oversee contract management with supply chain, hospitality and other project entities
- Oversee technology integration and ensure project Eco-profile

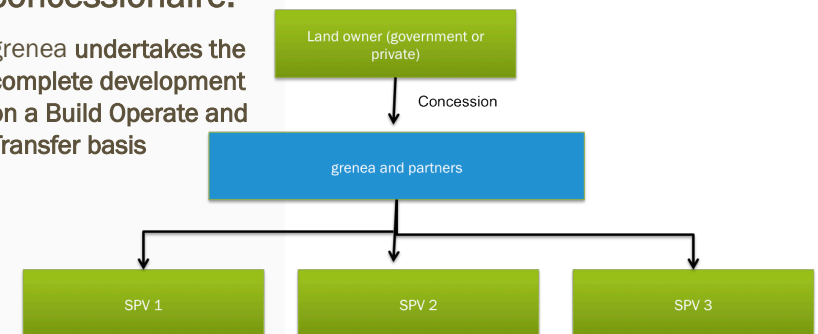
3-Private equity and development management:

- A typical example is one project in Eastern Europe



4-BOT/Master concessionaire:

grenea undertakes the complete development on a Build Operate and Transfer basis



CREATING ECO-DEVELOPMENTS

Investors

Supported by its know-how and cost competitive solutions, and by the increasing demand for zero carbon developments, **grenea** expects an IRR always greater than 20%



Why invest in Eco-projects?

- Increasing urbanization
- Growing political support, regulation and incentives are creating a vibrant market
 - » Countries around the world are increasingly imposing quite strict environmental targets on companies and consumers
- Eco-developments offer diversification within the green sector. Developments include many emerging opportunities from renewable energy, green technology and zero carbon solutions
- Eco-developments answer the demands of socially responsible investors
- Diminishing natural resources and higher prices is forcing companies and governments to adopt new strategies that favor the green sector
- Still a young and small sector meaning that the growth potential is huge.

Why partner with grenea?

- **grenea** is a pioneer of new sustainable business models
- **grenea** ensures the viability of the development
 - » **grenea** studies the project, sets the investment criteria, engages the right technology companies and invests in the project.
 - » **grenea** works closely with the developers and promoters of projects to ensure that meeting the sustainability targets will enhance the commercial value of the real estate. With its unique construction solution, **grenea** will ensure competitive cost with conventional developments
 - » **grenea** will set-up the business model allowing the various project stakeholders, the city council or government to benefit financially and economically from the embedment of sustainability parameters.
- Significant leveraging of the economies of scale across all **grenea's** projects
- Experience and knowledge from a range of projects
- International presence and outreach
- Strong team reputation

CREATING ECO-DEVELOPMENTS

Technology Companies

A new and open platform for innovation and deployment of integrated technologies



Why Eco-cities?

- Eco-cities offer collaboration and partnering opportunities in infrastructure development and management
- High-profile projects, media interest and government support
- Opportunity for differentiation
- Higher value for the developed assets
- Potential access to financial incentives

Why partner with grenea?

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 - » **grenea** works closely with the developers and promoters of projects to ensure that meeting the sustainability targets will enhance the commercial value of the real estate.
 - » **grenea** will set-up the business model allowing the various project stakeholders, including providers of green technology to benefit financially and economically from the embedment of sustainability parameters.

CREATING ECO-DEVELOPMENTS

Governments

Eco-developments provide platforms for the initiation and continuation of government led green initiatives



Why Eco-cities?

- Eco-developments produce long term building and infrastructure assets which can have meaningful impact on reducing CO₂ emissions
- Economic impact/growth and creation of Green jobs
- Positive social and environmental impacts

Why partner with grenea?

- **grenea** is a pioneer of new sustainable business models
- **grenea** ensures the viability of the development.
 - » **grenea** studies the project, sets the investment criteria, engages the developers and invests in the project.
 - » **grenea** works closely with the developers and promoters of projects to ensure that meeting the sustainability targets will enhance the commercial value of the real estate.
 - » **grenea** will set-up the business model allowing the various project stakeholders, governments and communities to benefit financially and economically from the embedment of sustainability parameters.
- Experience and knowledge from a range of projects and significant leveraging of the economies of scale across all **grenea**'s projects
- Local presence and outreach and a strong reputation

