

SEA of the Municipal Master Plan of Alcochete

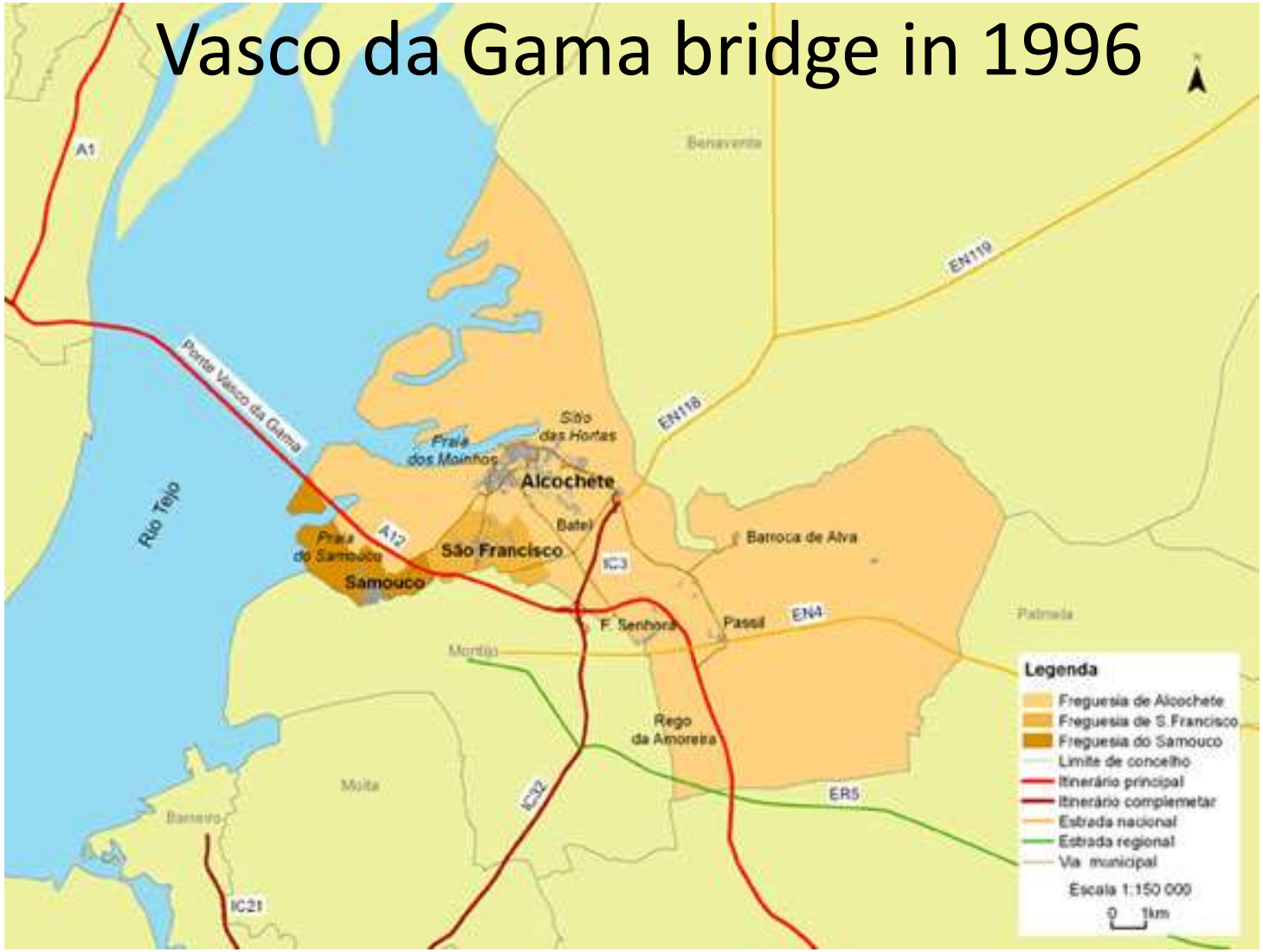


TÉCNICO LISBOA
CEG·IST CENTRO DE ESTUDOS DE GESTÃO DO INSTITUTO SUPERIOR TÉCNICO | TÉCNICO LISBOA
ENSU

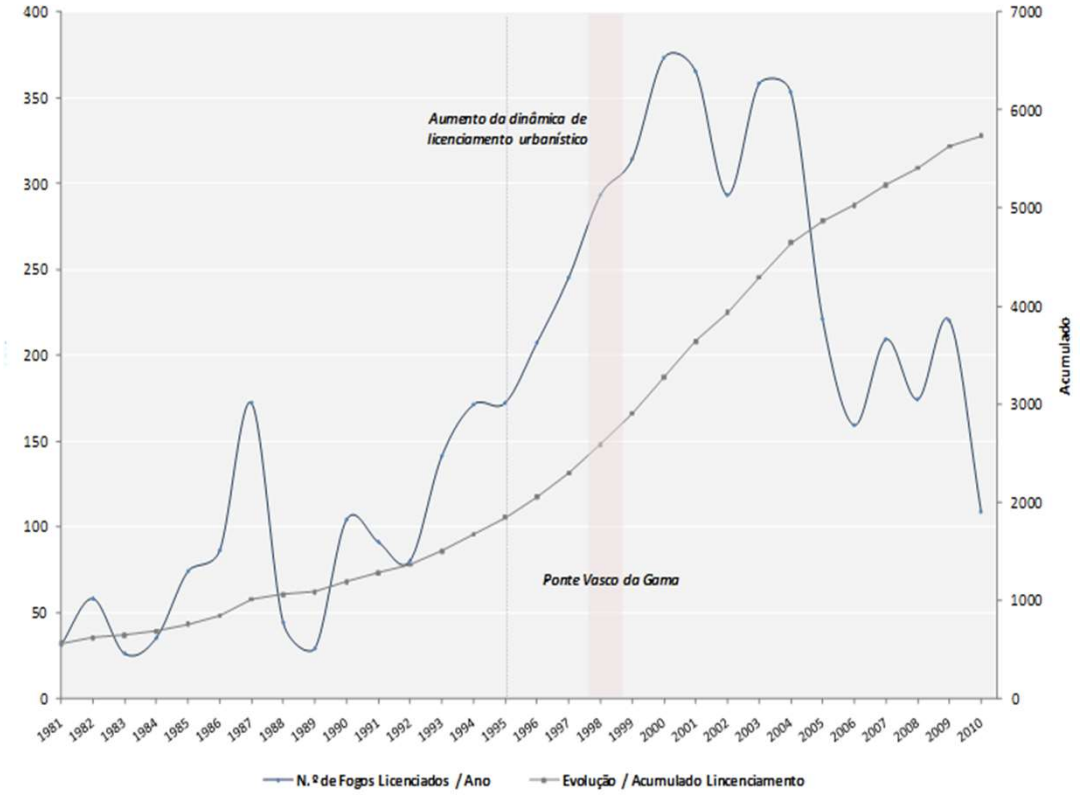
Alcochete
CÂMARA MUNICIPAL

Alcochete and the protected areas in metropolitan Lisbon

Alcochete connects to Lisbon with the Vasco da Gama bridge in 1996



Alcochete – the effect of the construction of the bridge on the rate of housing construction



Strategic issues (SI)

- Ensure the continuity of the ecological network and the conservation of wetlands (**RN Estuário do Tejo**);
- Increase **tourism potential** in Alcochete, with tourism supply, including quality accomodation and low density conected with natural and forest spaces;
- Strengthen the **local economy** capacity, promoting innovation and technological development;
- Requalification of the **river front** and existing urban centres, strengthening centralities and fighting **urban dispersion**.

- *Maintain and preserve the agro-forest space in the east, develop the primary sector of the cork forest, ecological farming, flower production, wine production and brand, horses creation;*
- *Follow the **qualification of the territory**, centred in na improved life quality for all citizens and a sustainable development;*
- *Maintain the **identity of the municipality**, strengthening cultural identity and the valuation of the characteristics that make a difference in Alcochete and in Lisbon Metropolitan Area;*
- *Stregthen the **social cohesion**, promoting health, access to housing,social integration and solidarity, as well as education and sports;*

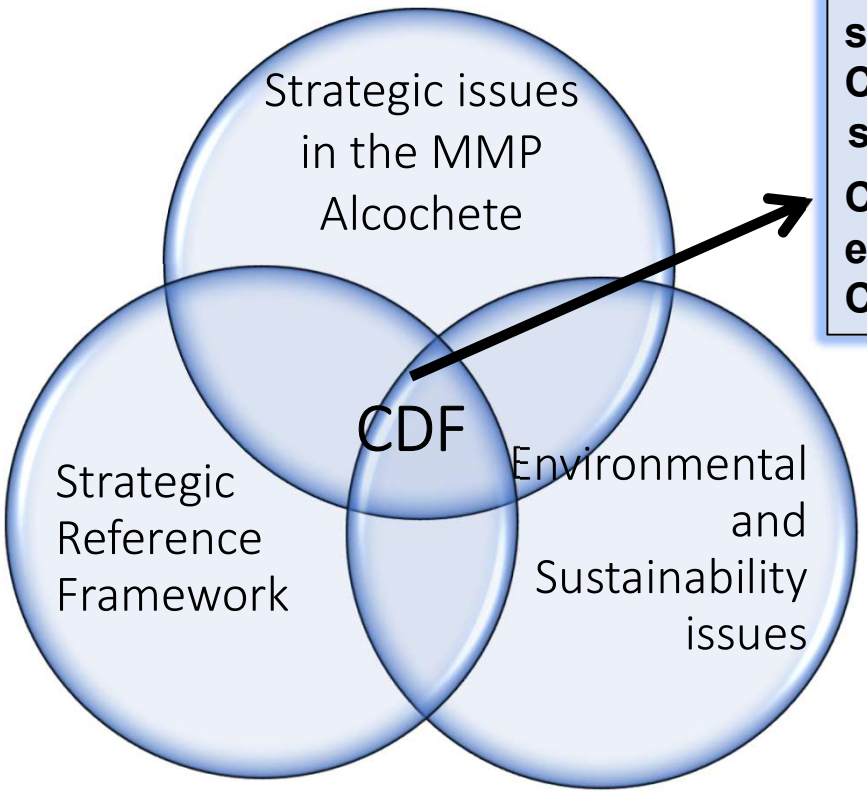
Problem framework

Problems	Potentials
• Weak use of Tagus river in creating experiences; • Weak use of the cultural, recreational and touristic capacity of the cultural heritage; • Urban pressure particularly in Alcochete and S. Francisco urban centres; • Illegal Urban development areas; • Reduced offer in public transports; • Inexistent of treatment in some industrial agriculture and husbandry effluents;	• Multi-functional agriculture planned; • Territorial plural functions: agriculture, forest, natural; • Reasonable archaeological heritage in 38 sites inventoried by national authority; • Favourable positioning in the metropolitan context as a result of better accessibility; • Incentive programme for residential areas for young families; • Good coverage of road networks; • Water quality for urban consumption in all urban settlements;

Strategic Reference Framework (SRF)

Environment and sustainability macro-policy orientacions	Relevant targets
CDF 1 Valorazation of natural systems	
Preservar os espaços de potencial agrícola, recuperando, conservando e protegendo os solos com maior produtividade agrícola e incentivar a agricultura competitiva em termos sustentáveis	Alcançar 10% da SAU em 2013 (ENDS) Aumento em 30% da SAU até 2015 de Sistemas agro-florestais com elevado interesse ambiental (ENDS)
CDF 2 Human attraction and settlement	
Promover o uso eficiente da água e assegurar a capacidade de reserva dos sistemas públicos de abastecimento de água, com base na protecção a longo prazo dos recursos hídricos disponíveis	Atingir em 2011 uma eficiência de utilização da água de 80% em termos de consumo urbano, de 66% no consumo agrícola e de 84% no consumo industrial (ENDS)
CDF 3 Cultural Identity and economic dynamics	
Explorar economias de rede e promover a interacção entre os diferentes agentes da inovação, expandindo as redes e infra-estruturas avançadas de informação e comunicação, e reforçar o investimento privado em Ciência, Tecnologia e Inovação	Mobilizar Portugal para a Sociedade da Informação (Plano Tecnológico): - Aumentar para 15% a população em idade activa com diploma do ensino superior
CDF 4 Energy and Climate change	
Desenvolver políticas e medidas que apostem numa descarbonificação da economia através do apoio à investigação e desenvolvimento de tecnologias, a execução de projectos de consolidação de clusters industriais	Em 2020 (ENE 2020): 60% da electricidade produzida e 31% do consumo de energia final com origem em FER e uma redução de 20% do consumo de energia final

Strategic Assessment Framework



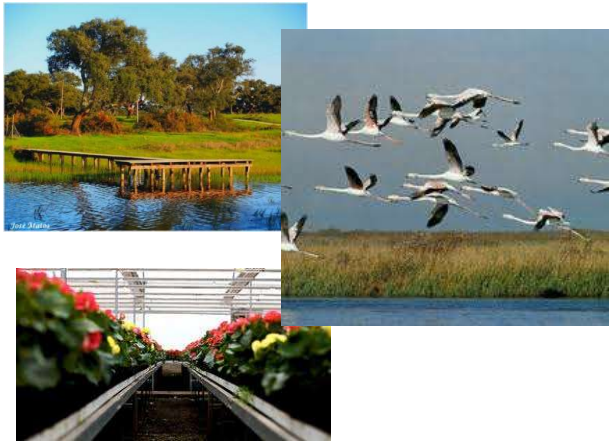
CDF 1 Valorazation of natural systems
CDF 2 Human attraction and settlement
CDF 3 Cultural Identity and economic dynamics
CDF 4 Energy and Climate change

Alcochete
CÂMARA MUNICIPAL

Critical Decision Factors

CDF 1 Valorazation of natural systems

- Valuation of wetlands
- Valuation of natural systems non wetlands
- Ecosystem services



CDF 2 Human attraction and settlement

- Housing
- Urban life and vicinity services
- Mobility
- Municipal environmental quality

Critical Decision Factors

CDF 3 Cultural Identity and economic dynamics

- Economic activities that value municipal identity
- Employment poles
- Maintenance and valuation of cultural heritage

CDF 4 Energy and Climate change

- Energy efficiency in transports, housing and economic activities
- Use of renewable energy sources
- Climate change adaptation and mitigation

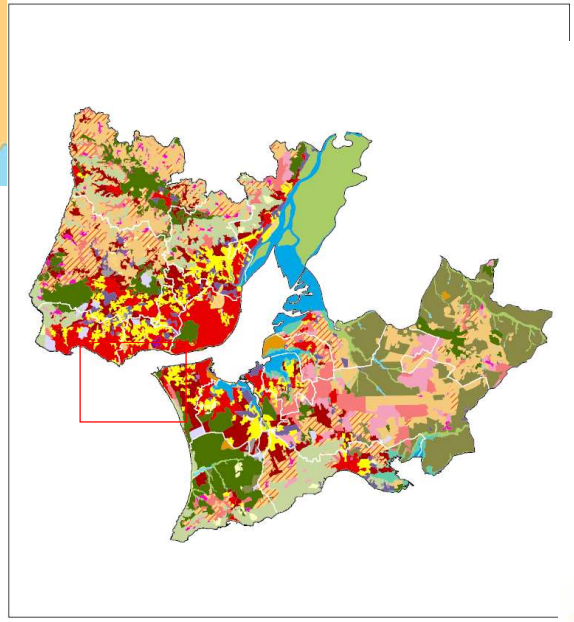
Alcochete
CÂMARA MUNICIPAL

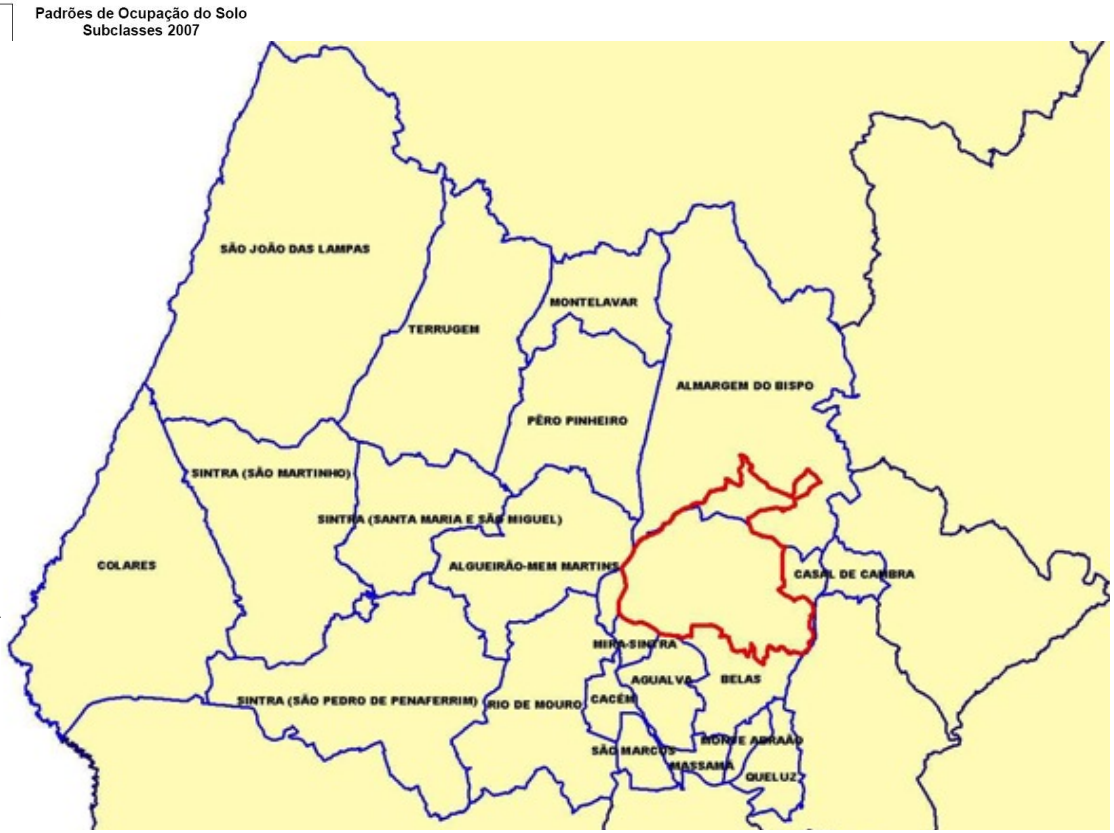
SEA of the Urban Development Plan of Carregueira, Portugal

Strategic-thinking model

IST (Instituto Superior Técnico), Portugal
SENSU Research Group (**http://sensuist.pt.vu**)

SERRA DA CARREGUEIRA





Initiative

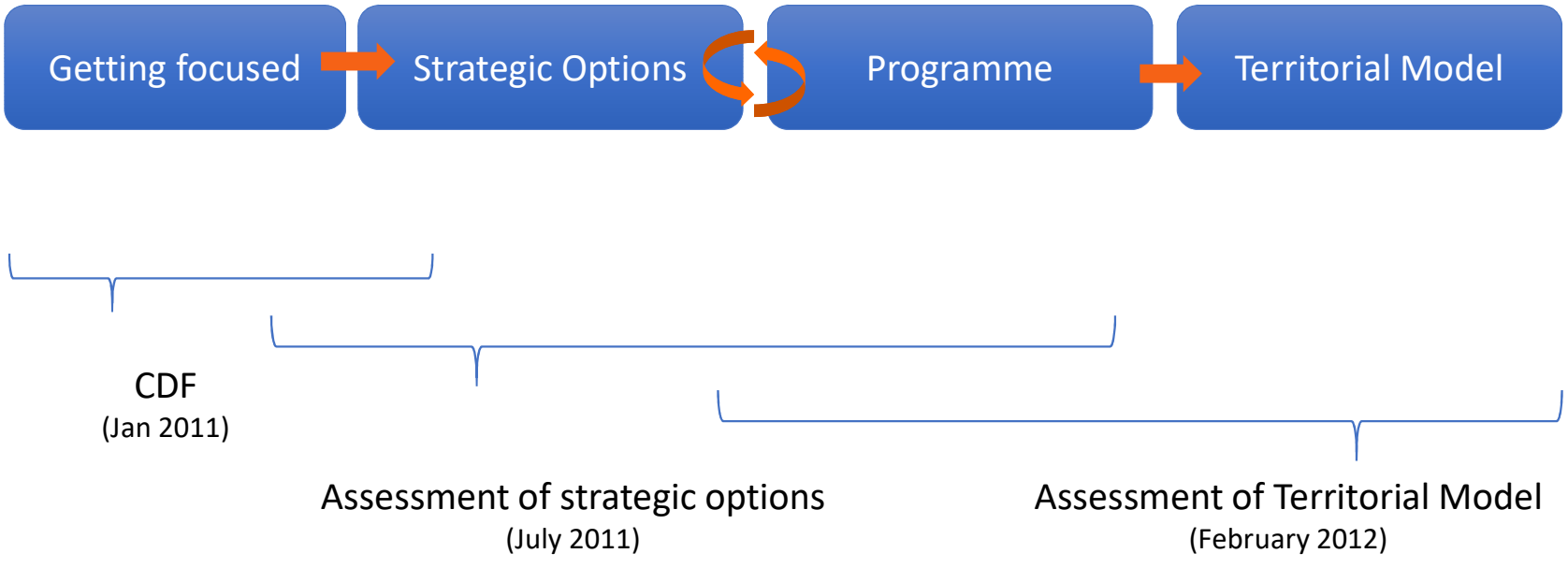
Municipality of Sintra and main urban developer required SEA to assess strategy for urban expansion of existing residential area

Carregueira is a Forest Park of regional importance for biodiversity and ecological framework

Major public concern on urban expansion, NGOs pressure

The strategy for the urban expansion is the **object of assessment** of the SEA.

Methodological approach

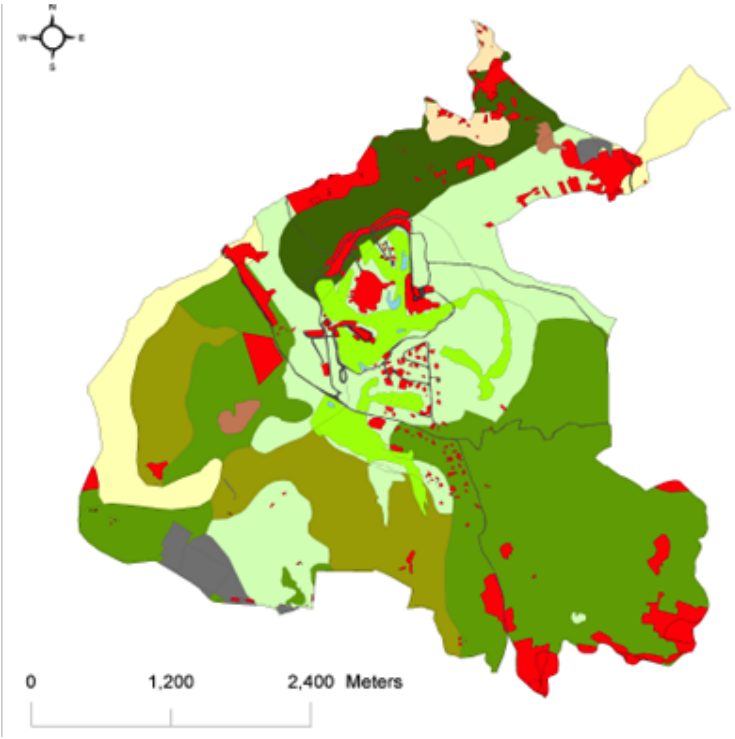


SERRA DA CARREGUEIRA – main driving forces

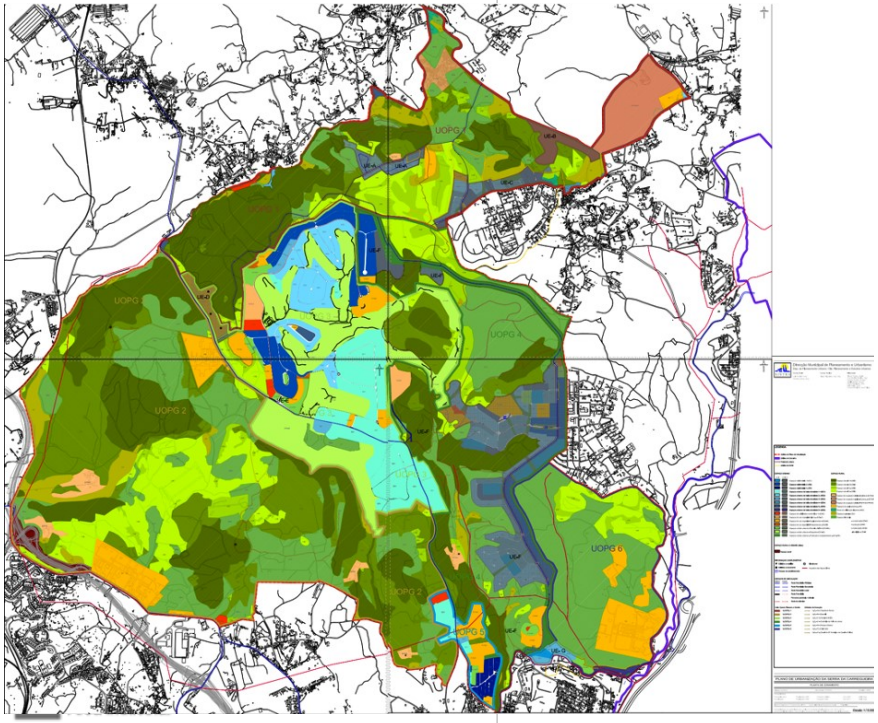
SERRA DA CARREGUEIRA – 10 years of evolution

SERRA DA CARREGUEIRA

land occupation



proposed land use



Study of ecological system and groundwater preceeded SEA

Critical Decision Factors

CDF1 – **Multifunctional landscape and biodiversity**

- Conservation and valuation of cultural heritage
- Multifunctionality
- Environmental valuation of water resources

CDF 2 – **Environmental Quality**

- Physical quality
- Adaptation to Climate change
- Natural and technological risks

Critical Decision Factors

CDF 3 – **Lifestyles**

- Quality of urban space and conflicts of use
- Tourism and recreation assets
- Culture/image and local identity

CDF 4 – **Energy efficiency and mobility**

- Energy efficiency
- Renewable energy resources and CO_2 mitigation
- Mobility

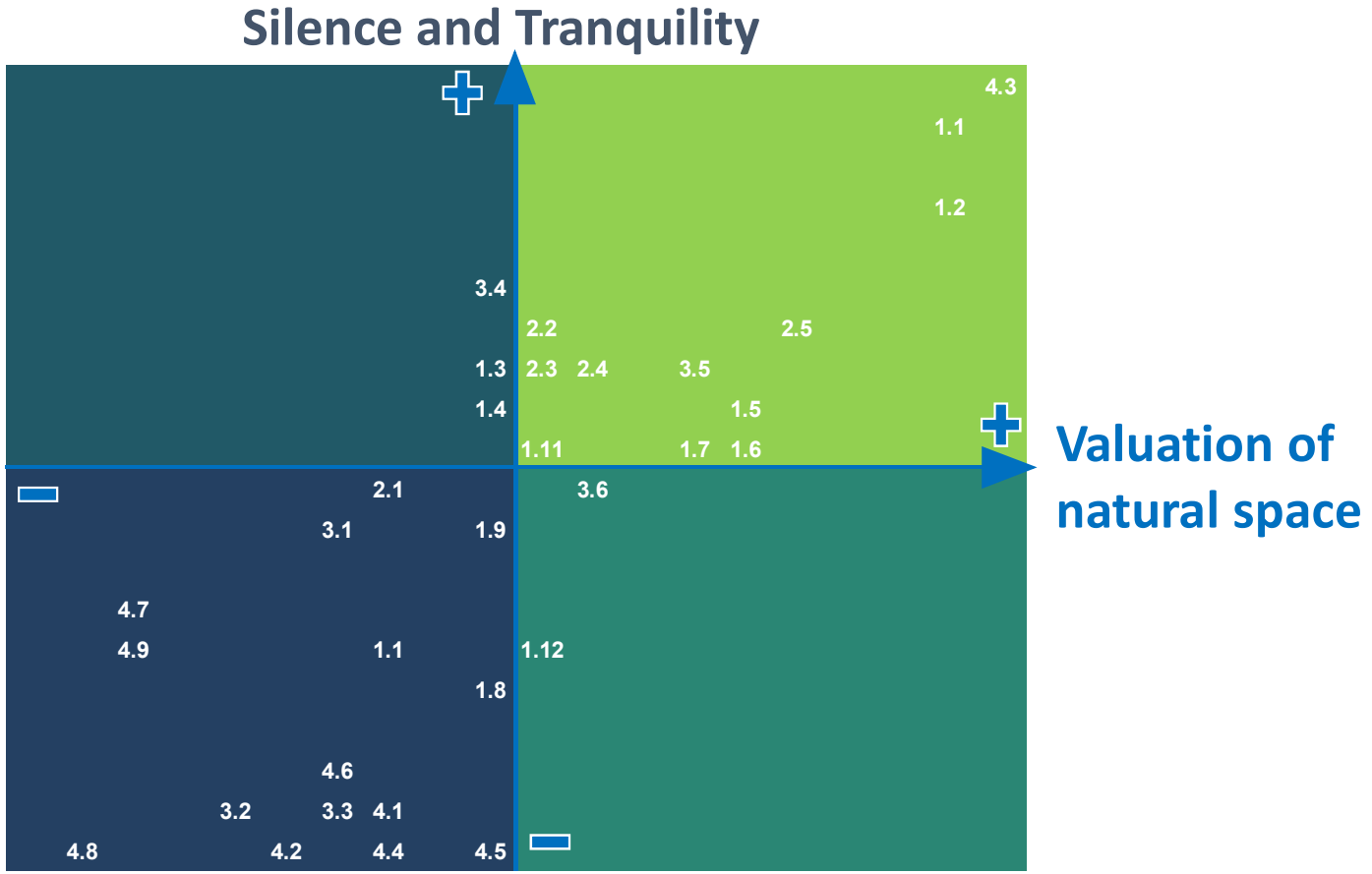
Critical Decision Factors

CDF 5 – **Governance model**

- Adaptive management and public-private partnership
- Participation models and stakeholders engagement

Coherence analysis of Plan objectives

Risks and opportunities



Assessment of Strategic Options

Risks and opportunities

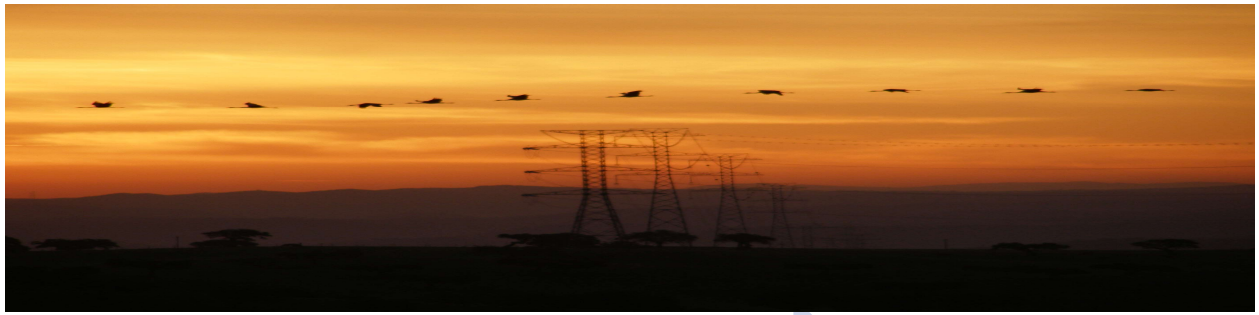
Domínios Estratégicos	Linhas de Orientação Estratégica	Opções Estratégicas		FCD #1 Paisagem Multifuncional e biodiversidade	FCD #2 Qualidade do Ambiente	FCD #3 Estilo de vida	FCD #4 Eficiência energética e Mobilidade	FCD #5 Modelo de Governança
Turismo e lazer		OE TL1	Aumento da oferta de alojamento turístico	-	-	+-	-	-
		OE TL2	Criação de uma oferta turística sustentável	+-	+	+	+-	+
Sistemas Socioecológicos		OE SS1	Valorização da Floresta e dos Sistemas Naturalizados	+	+	+	+	+
		OE SS2	Construção de uma paisagem numa perspectiva socioecológica	+-	+	+	+-	+
		OE SS3	Urbanização da paisagem	-	-	-	-	+-
Estruturação urbana	Edificado	OE E 1	Intervenção urbana localizada		-	+-	+-	+-
		OE E 2	Requalificação urbana		+-	+	+-	+-
		OE E 3	Reforço das áreas logísticas e da dotação de equipamentos		+-	+-	-	+
	Desenho Urbano de novos empreendimentos urbanos da Colonade	OE DU 1	Urbanizar na "vertente nascente da Ribeira de Belas"	-	-	+-	-	+
		OE DU 2	Urbanizar no "Casal do Brouco"	+-	-	+-	-	+
		OE DU 3	Urbanizar na "vertente nascente da Ribeira de Belas" e limite Norte do BCC	+-	+-	+-	-	+
Mobilidade, Acessibilidades e Infra-	Rede viária	OE RV 1	Articulação e integração da nova rede viária	+-	+-	+	-	
		OE RV 2	Melhoria da rede existente	+	+-		+-	+
	Transporte	OE T1	Predomínio do modo de transporte individual		-		-	
		OE T2	Predomínio do modo de transporte público		+	+	+-	

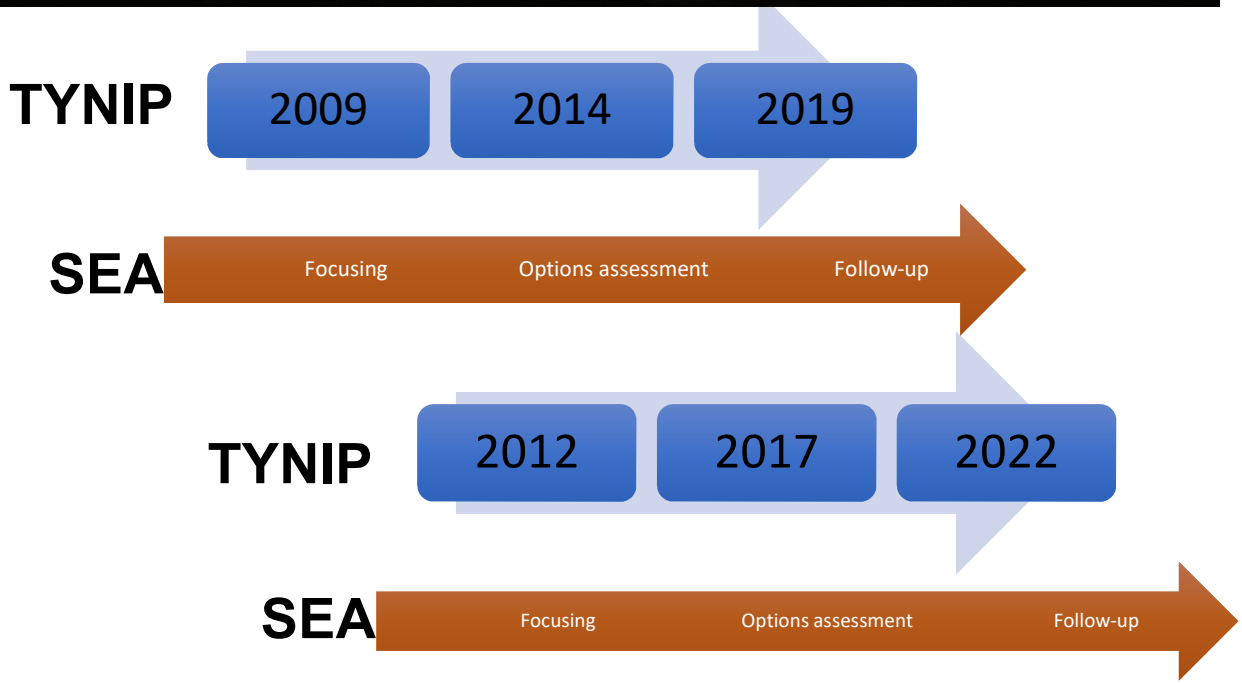
Lessons learned

Strongly driven strategic-thinking model
Focuses on 5 main critical decision factors
Strategic context of the Forest Park was considered in the Metropolitan Area of Lisbon
Role of Forest Park was recognized and territorial model was conceived to predominantly maintain that function
Institutional engagement was integrated in the planning formal legal requirements (consultation throughout the process) and public participation was limited to final stages
Urban design was strongly influenced by outcomes of SEA as well as on two particular studies developed as a contribution to SEA: ecological framework and groundwater infiltration dynamics.

SEA OF THE TEN YEAR NATIONAL INVESTMENT GRID PLAN

REN, SA





Objectives of SEA of PDIRT 2009 – 2014 (2019)

- To identify, describe and assess, from an environmental and sustainability perspective, the strategic options that can be considered so as to ensure the expansion of the national electricity transport grid (RNT);

- To assess the potential significant environmental effects on the environment that result from the application of PDIRT (D.L. nº232/2007, 15 of June);

- To assist with planning the transport grid expansion demands, considering environmental and sustainability objectives.

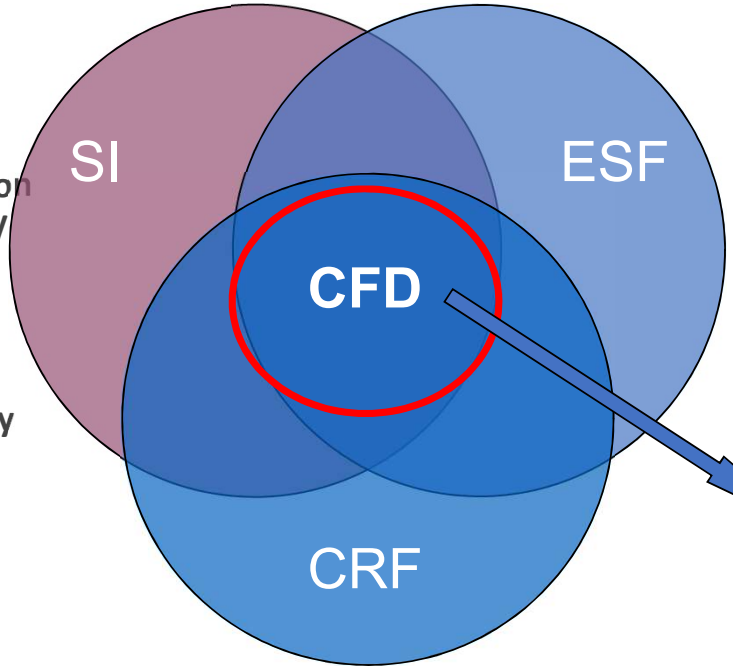
Environmental scope (Directive 2001/42/CE)

Environmental issues required in national legislation (Decreto – Lei nº 232/2007 June)	Interpretation used in the SEA of PDIRT
Biodiversity Fauna Flora	Fauna and protected areas
Landscape Cultural heritage	Landscape and cultural heritage
Climatic factors	Energy
Population Human health	Health and population Noise
Material goods	Urban Network, spatial channels and large infra-structures
Water Atmosphere Soils	Not relevant

Critical Factors for Decision-making (CFD)

To ensure:

- Supplies to expected demands
- Appropriate conditions to incorporate electricity production (...) while meeting energy policy objectives with respect to renewable energy resources;
- Appropriate levels of inter-linkage capacity (MIBEL);
- Appropriate levels of quality of service (conservation/replacement of facilities)



Fauna and Protected areas; Landscape and Cultural heritage; Energy; Population, Human health and noise; Urban network, Spatial channels and large infra-structures

Energy

Fauna

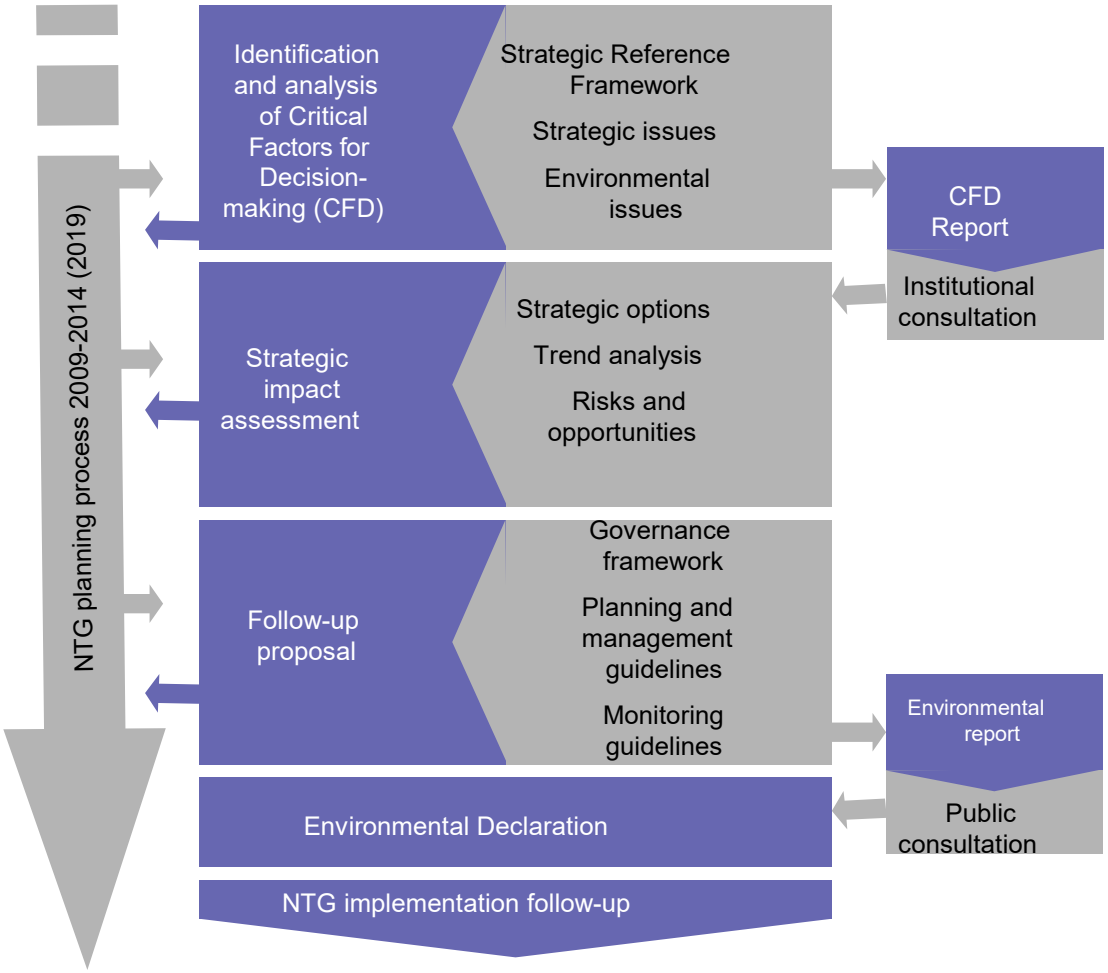
Spatial Planning

Kyoto Protocol; SDS-EU; European Programme for Climate Change; NSSD; National Strategy for Energy; PNAC; PNBEPH;QREN; PNAAS;etc.

CDF and Assessment criteria

Critical Factors for Decision-making	Assessment criteria
ENERGY	To accommodate power generation, particularly that coming from Production in Special Regime (PRE)
	Energy efficiency (management and reduction of transmission grid losses);
FAUNA	Intersection with protected areas
	Crossing of critical zones for species of fauna (except birds and bats)
	Crossing of critical zones for species of birds with unfavourable conservation status that are most sensitive to collision
	Proximity to bat areas of national importance
	Reduction of cumulative impacts
SPATIAL PLANNING	Interference with sensitive areas (including landscape) or conditioned by natural and cultural heritage protection
	Interference with areas of significant human presence, as well as areas of existing and potential infra-structures
	REN spatial enhanced potential (including synergistic effects with relevant power generation areas)

Process of the NTG Plan SEA



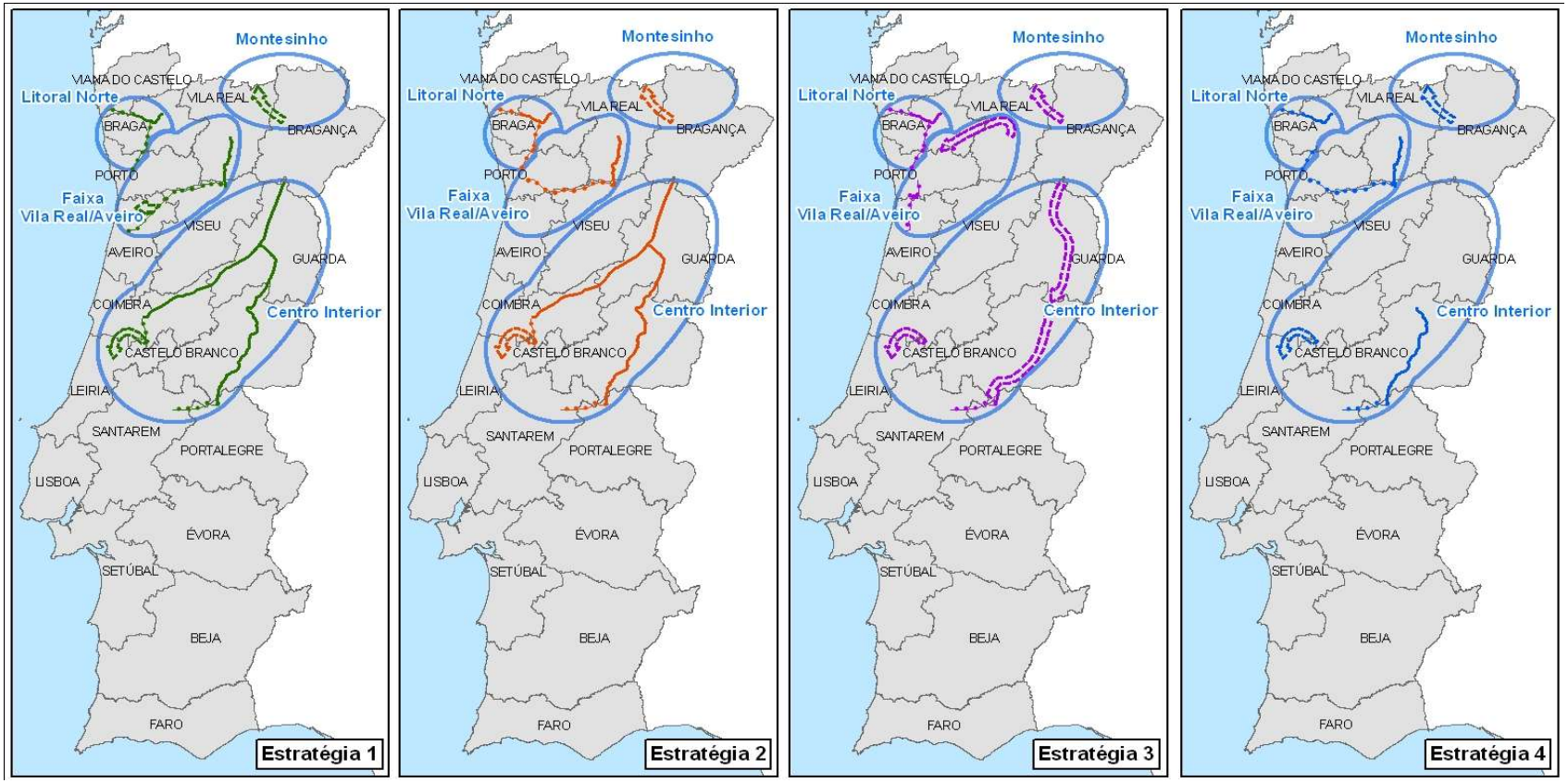
Processo PDIRT	Início AAE	Cenários e opções	Simulações		Consulta		Pdirt-final		

AAE – Estudos para AAE	Jul-Ago 2007	Set-10 Out 2007	10-15 Out	15 Out-10 Dez 2007	10-15 Dez	Jan-15 Fev 2008	15 Fev - 25 Mar 2008	25-31 Mar	31 Mar - 25 Jun 2008	25-3
Coordenação e Acompanhamento - processo										
Estabelecimento do processo e calendários	■			■			■			
Análise do ciclo de processo do PDIRT e identificação de momentos críticos	■									
Definição de conteúdos e formatos de estudos e relatórios	■	■		■			■		■	
Coordenação de Estudos	■	■		■				■	■	
Entrega de conclusões orientativas			■					■		
Entrega de relatórios	■				■					■
Consulta de entidades	■					■				
Consulta de agentes e público						■				
Estabelecimento do processo de seguimento e quadro institucional									■	
Declaração Ambiental										■
Acompanhamento do processo	■	■	■	■	■	■	■	■	■	■
Factores Críticos para a Decisão										
QRE, FA e QE do PDIRT	■									
FCD, Critérios e indicadores	■									
Relatório de FCD	■									
Apreciação de comentários das entidades		■								
Análise e Avaliação - Estudos										
Análise de tendências e caracterização - ligação QRE		■								
Interpretação de cenários		■								
Avaliação de opções		■								
Identificação de oportunidades e riscos		■								
Conclusões orientativas			■					■		
Justificação de oportunidades e riscos				■			■			
Apreciação de comentários das entidades e público				■		■	■			
Directrizes e indicadores de monitorização				■			■		■	
Programa de Seguimento				■					■	
Relatório ambiental				■						■

Expansion strategies

	Description	Capacity to receive new generated PRE (1)	Flexibility
Strategy 1	Strategy with the highest potential, preferably using existing axes, with all new main projected lines at 400 kV	Very high	High
Strategy 2	Strategy with high potential, preferably using existing axes, with a significant number of new lines with voltages below 400 kV	High	High
Strategy 3	Strategy with high potential, with some axes covering new areas, with all new main projected lines at 400 kV	Average/High	Average
Strategy 4	Strategy restricted to the minimum requirements that fulfil national energy policy objectives.	Low	Low
Strategy F	Strategy with high potential, with new expansions largely developed through existing axes, with all new main projected lines at 400 kV	High/Very high	High

(1) Beyond targets established in the national energy policy objectives. Fonte: REN



Lines/Corridors

New route in corridor to be defined

Existing corridor with rebuilding

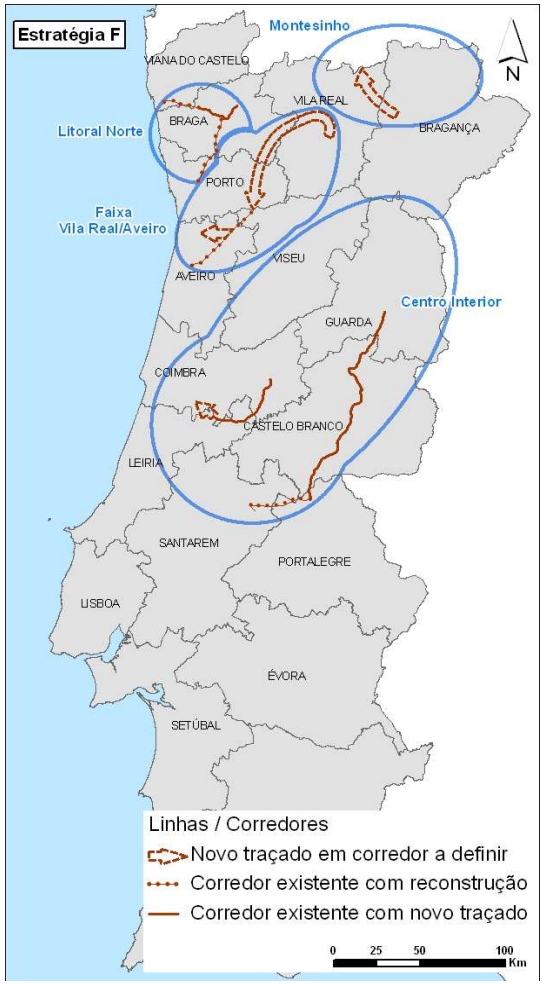
Existing corridor with new route

Strategy F (Final)

Strategy F (Final) is the result of the cross comparison, analysis and assessment of the 4 initial strategies:

It represents the best option for the evolution of the grid that creates more flexibility through a series of technical solutions and geographical coverage of the areas with higher power generation potential.

Note: New lines and substations already decided, scheduled before 2012/13, were not considered as candidates to the different alternative strategies

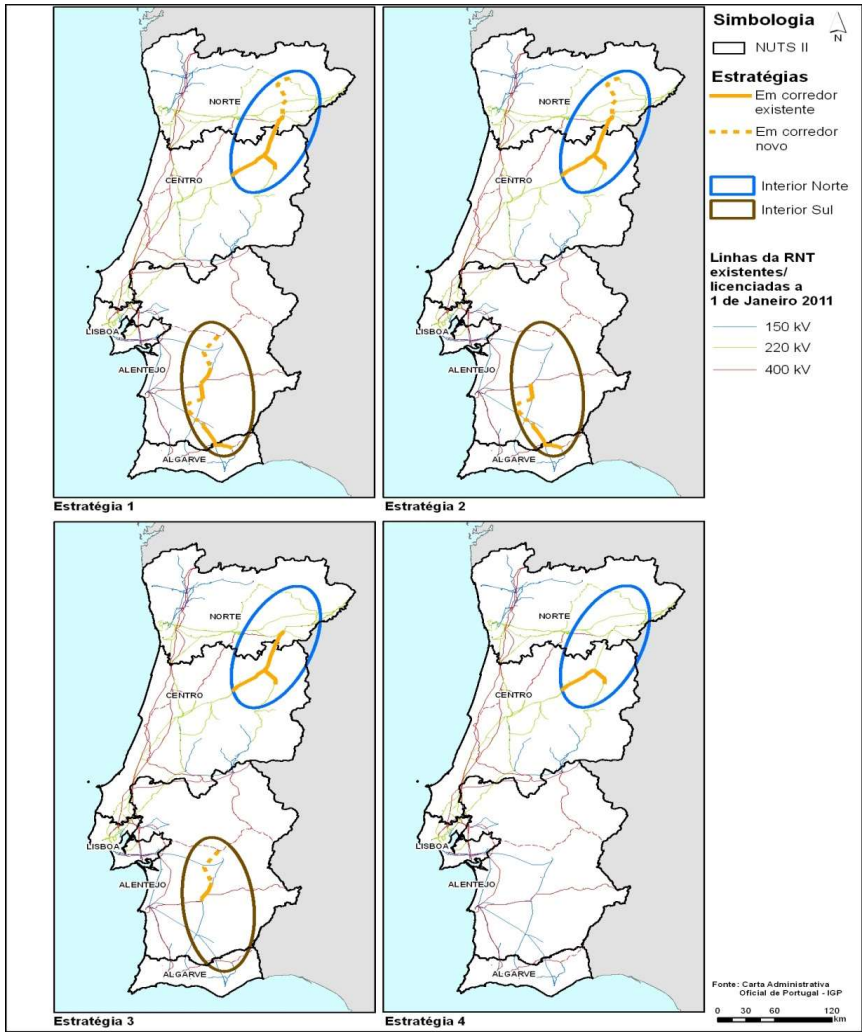


Assessment results per CFD

CFD	CRITERIA	E1	E2	E3	E4	EF
ENERGY	To accommodate power generation, particularly that coming from PRE	++	+	+	-	++
	Energy efficiency (management and reduction of the transmission grid losses);	+	-	-	+	+
FAUNA	Intersection with protected areas	--	--	--	-	-
	Crossing of critical zones for species of fauna	--	--	-	--	-
	Crossing of critical zones for species of birds with unfavourable conservation status that are most sensitive to collision	--	--	-	-	-
	Proximity to bats areas of national importance	--	--	--	--	-
	Reduction of cumulative impacts	-	-	+	+	+
SPATIAL PLANNING	Interference with sensitive areas (including landscape) or conditioned by natural and cultural heritage protection	--	--	-	-	-
	Interference with areas of significant human presence, as well as areas of existing and potential infra-structures	--	--	--	-	+
	REN spatial enhanced potential (including synergistic effects with relevant power generation areas)	+	+	-	-	++

Key:++ Highly significant opportunity; + Opportunity; 0 Indifferent; -..Risk; - - Highly significant risk

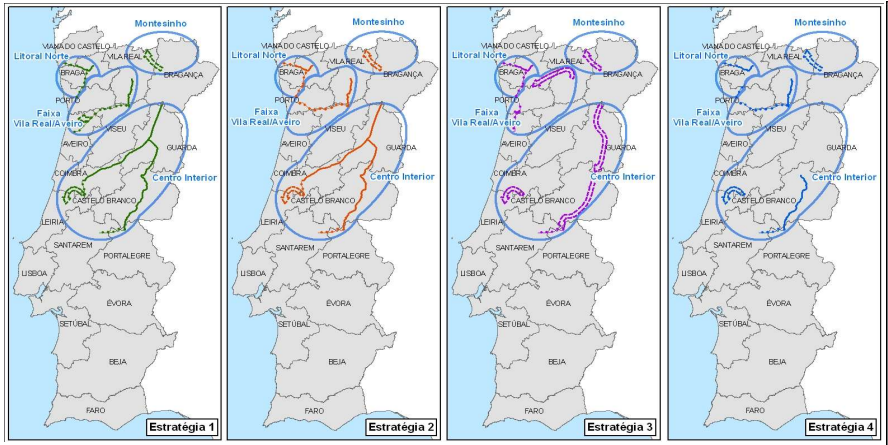
PDIRT 2012-2017 strategic options for the development of the NTG

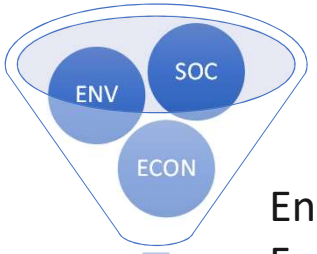


SEA OF THE TEN YEAR NATIONAL INVESTMENT GRID PLAN

REN, SA

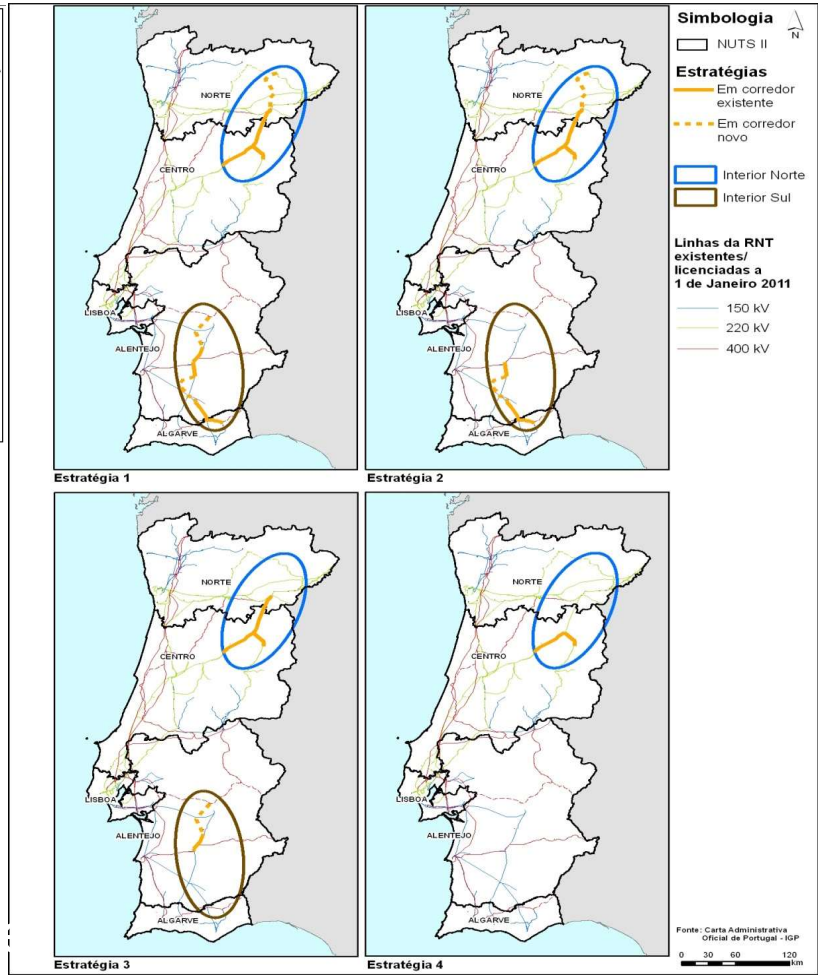
Results: options assessment





CDF

Energy,
Fauna,
Spatial
Planning



In both cases a fifth option was the preferred

Governance framework

- **REN** - To maintain dialogues with competent authorities concerning spatial planning, licensing of electricity production activities and all those that have experience regarding electrical lines;
- (...)
- **APA (Environmental Authority)** - To keep GEE targets up-to-date (horizon 2020) and results of monitoring of PNAC (national CC programme) measures (renewal production and reduction in distribution losses).
- (...)
- **Regional and local spatial planning authorities** – To keep spatial development perspectives up-to-date and ensure inclusion of the national electricity transport grid reserved space in spatial plans;

- **Environmental NGO's** – To follow PDIRT monitoring, cooperate in partnerships with REN and participate in public consultation processes.
- (...)

Follow-up guidelines

Planning and Management

• Ensure that no infra-structures or facilities are developed in natural sensitive areas and high landscape and cultural heritage valuable sites, as well as in areas with major urban development commitments.

• Ensure effective participation of the interested public improving information, dissemination and negotiation processes

Monitoring

• Establish an institutional platform to enable systematic interface and dialogues across relevant stakeholders in energy production

• Establish a PDIRT monitoring platform;

• Monitor the development of the national electricity transport grid to adjust to the effective power production.

Follow-up process

- Implementation of a monitoring system, based in the definition of indicators to each of the planning and management and monitoring guidelines proposed by the SEA process
- Articulated with the EIA follow-up system and with the Sustainability Reporting Indicators System
- Indicators specially designed to cover the monitoring of the governance framework for action proposed
- Strong transparency and sharing of responsibilities in the Plan implementation with public institutions and the public
- Dedicated communication channels (Internet; e-mail; public meetings).

Lessons learned

Success factor 1: Early start

- The SEA explored strategic options and was focused on a strategic decision, not on proposed solutions.

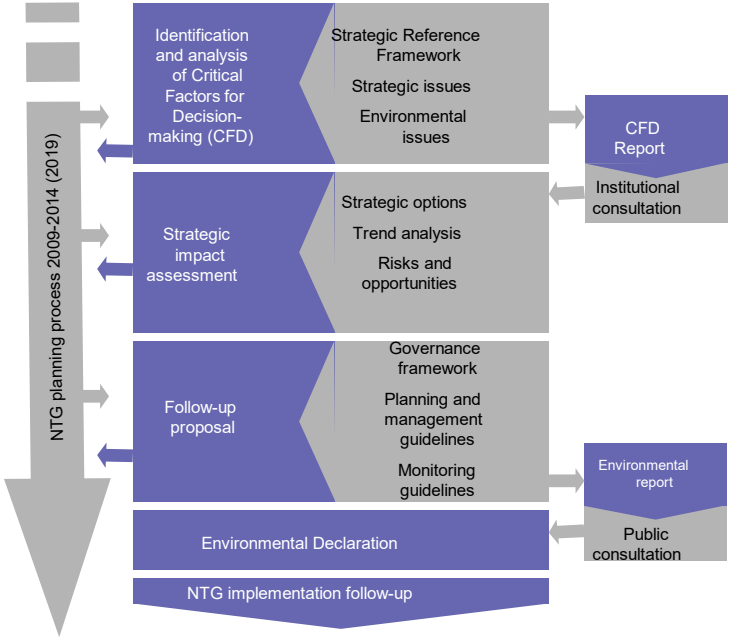
Success factor 2: Strategic long-term and cyclical planning

- The strategic nature of the NTG planning process (long-term view 10 years view and short term review cycle: 3 years) enables flexibility in planning and opportunities for improvement, it offers the best planning setting for the application of a strategic-based approach in SEA

Lessons learned

Success factor 3: Strategic position in decision-windows, iterative fine-tuning

- SEA and the NTG planning link together throughout, with several iterations – NTG call on SEA for inputs to be able to move in preparing scenarios, options and fine-tune solutions

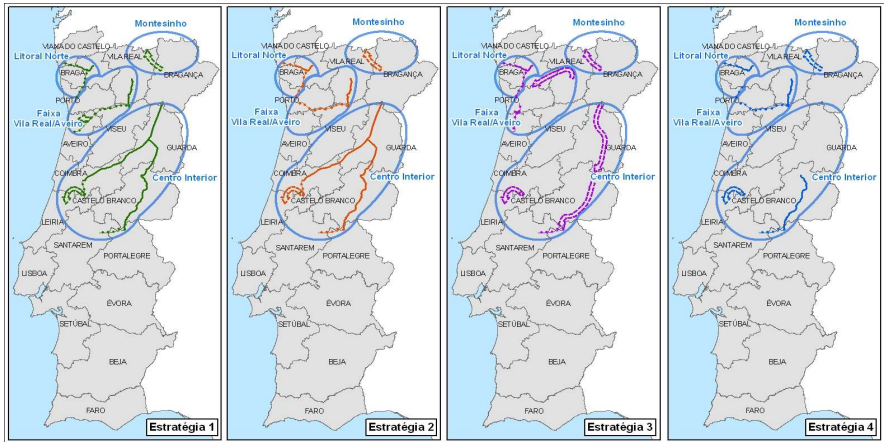


Lessons learned

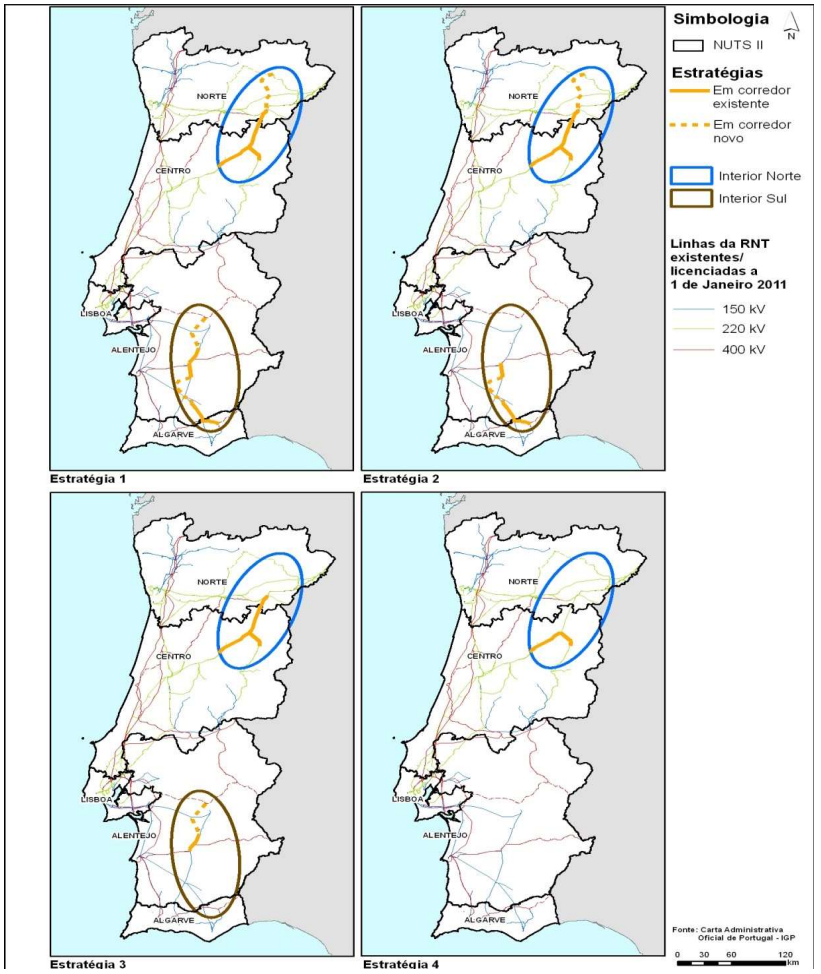
Success factor 4: strategic options to select critical pathways for sustainability

- Priority in SEA was assisting NTG planning to find options that would create more sustainable conditions for NTG development, avoiding conflicts at project's level.

Four starting strategies for the development of the NTG were prepared for SEA analysis



PDIRT 2009-2014(2019)



PDIRT 2012-2017(2022)

Lessons learned

Success factor 5: Critical decision factors collectively identified

The CDF were identified through experts judgement based on brainstorming discussions involving the SEA and the NTG planning teams, REN top management, sectoral and environmental authorities.

Success factor 6: Governance framework

- Several sectoral authorities and private organization are likely to influence the effectiveness of plan implementation and are engaged with responsibilities in its implementation. They were also involved in post-evaluation.

Lessons learned

Success factor 7: Communication strategy

- REN established a dialogue platform (workshops, meetings, written communication, website) with internal and external stakeholders providing for intensive inter-change of perspectives. This was extended over the post-evaluation period in the interim period. This strategy strengthened dialogue between REN and its planning process stakeholders, including private companies, sectoral administration, environmental authorities, NGO's and the public.

Success factor 8: Development of trust, knowledge-brokerage

An initial ice-break, and knowledge-brokerage period was crucial to create trust between NTG planning and SEA teams. The communication strategy also contributed to increase levels of trust with other stakeholders, enabling knowledge-brokerage.

Obstacles founded

- Often need to explain and justify to authorities the strategic SEA methodology vs. methodologies that follow more closely the practice of EIA projects – resisting mental model
- Scale of the SEA analysis - precise location of certain lines or sub-stations have proved to not be relevant to the scale of strategic analysis – yet EIA mental model expects to see discussion of detail
- Follow-up and monitoring difficult due to fragmentation of institutional responsibilities and insufficient practice

Final Remarks

- Development of trust, and a communication strategy is critical to the success of SEA
- Strategic-based SEA processes can create a platform for dialogue that will enhance the interaction between proponents and their stakeholders
- Usefulness of SEA strategic approaches in enabling more sustainable investment by the private sector
- Strategic-based SEA proves to facilitate the planning processes and better sustainable and environmental outcomes