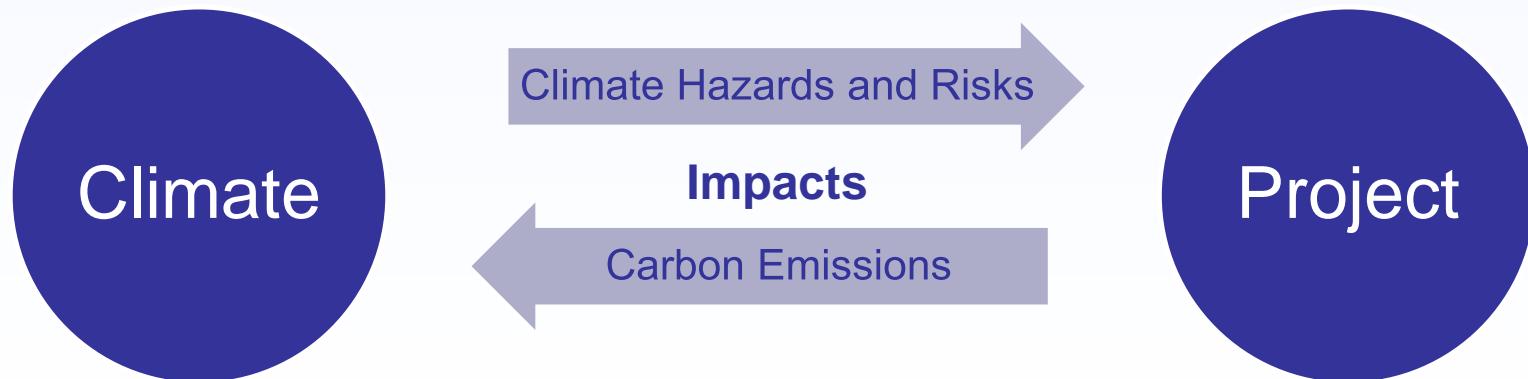


# Climate Change and Project Development, EIA and Screening

Ljubljana, 21 June 2017

# Climate Change Adaptation vs Mitigation

- There are two main components in dealing with climate change: mitigation and adaptation. **Mitigation** is about dealing with the causes of climate change, by reducing greenhouse gas emissions (GHGs). **Adaptation** is about dealing with the inevitable consequences of climate change and attempting to lower the risks.



# Integration into Project Development

- Climate change considerations (adaptation and mitigation) need to be an integral part of the overall project development cycle.
- It is not just an add-on in one stage of the process.
- It is not just a report or a permit.

# Integration into Project Development

## Outline of the integration of climate change requirements into the development stages of major projects

### Project development cycle

#### Strategy

- Programming (B.4)
- Sector strategies ((B.4)
- Environment and climate change policy (F.1, F.8.1)
- Strategic site and technology selection (D.3, F.8)
- Pre-feasibility studies
- Business Model Development
- SEA (F.2)

#### Feasibility

- Demand analysis (D.1)
- Option Analysis (D.2, F.8)
- Feasibility studies (D.3, F.8)
- Site selection (D.3, F.8)
- Technology (D.3, F.8)
- Conceptual design (B.3)
- Financial analysis (E.1)
- Economic analysis (E.2)
- Risk and sensitivity (E.3)
- EIA Screening (F.3, F.8)
- CBA (E.2)

#### Design

- Main/Final Design (B.3)
- EIA (F.3) + (F.4-7)
- Development consent (F.3)

#### Procure/build

- Timetable, main categories of work (H.1)
- Project maturity, public procurement (H.2)

#### Operate

- Asset management
- Operation & maintenance
- Monitoring and control

#### Decommission

- Decommissioning
- End of asset life

## Adaptation - vulnerability and risk assessment - enhancing the resilience to the adverse impacts of climate change

#### Strategy

- Strategic climate vulnerability screening - using the same principal steps as for the detailed vulnerability and risk assessment

#### Feasibility, Design

- Vulnerability and risk assessment as outlined in this fact sheet
- Option analysis, climate risk and adaptation (F.8.2, D.2.1-2)
- Measures ensuring resilience to current/future climate (F.8.3)
- Technical aspects e.g. location and design (B.3, D.3.2)
- Environment and climate change aspects (D.3.3, F.1.1)
- Economic analysis (E.2.1)
- Risk assessment and sensitivity analysis (E.3.1-4)

#### Construction, operation, decommission

- Implementation of adaptation measures in construction and operation
- Monitoring of critical climate hazards
- Regular review of the climate hazards (which may change over time) updating of the risk assessment, review of the structural and non-structural adaptation measures, and reporting to the project owner and other as required

## Mitigation - reducing the emission of greenhouse gas - EIB Carbon Footprint methodology and carbon shadow prices in CBA

#### Strategy

- Link to climate policy and GHG emission targets
- Less carbon intensive solutions in planning

#### Feasibility, Design

- EIB Carbon Footprint methodology, CO<sub>2</sub> shadow prices (E.2)
- Contribution to climate targets in EU2020 Strategy including the national targets of the Efforts Sharing Decision (F.8.1)
- Consideration of less carbon intensive options (F.8.2, D.3)
- Environment and other aspects (D.3.3, D.3.4, F.1.1)
- Economic analysis (E.2.1)

#### Construction, operation, decommission

- Reduction of GHG emissions in construction and operation
- Verification of actual GHG emissions

The text in brackets, e.g. (B.4) refer to the corresponding section in 'Format for submission of the information on a major project', Annex II, Commission Implementing Regulation (EU) 2015/207. The diagram is indicative and entails some flexibility as to when certain activities should be undertaken in the project cycle.

# Integration into Project Development

## Project Development Cycle – Feasibility Studies – Option Analysis

### Climate Change Adaptation

- Relative vulnerability of options - assess whether one option is more or less vulnerable than another option.
- Relative sensitivity of technical options.
- Relative exposure of location options.
- Based on expert judgement and understanding of current and future climate

### Climate Change Mitigation

- Carbon footprint of each project alternative / option calculated and these figures used in the assessment of options

# Integration into Project Development

## Project Development Cycle – Design

### Climate Change Adaptation

- Full Risk Assessment for all vulnerabilities – assessing probability and severity
- Part of an overall Risk Assessment
- Based on expert judgement and sound data regarding current and future climate
- Integration of adaptation measures into design and operation
- Reduce risk to acceptable level

### Climate Change Mitigation

- Attempt to reduce GHG emissions through design
- Carbon footprint of final technical solution
- Using shadow price of carbon, monetise emissions and include in the CBA

# Integration into Project Development

## Project Development Cycle – Implementation

### Climate Change Adaptation

- Implementation of adaptation measures during construction and operation
- Monitor changes in climate
- Review effectiveness of measures
- Manage risks

### Climate Change Mitigation

- Attempt to reduce GHG emissions during construction and operation
- Verification of ex-ante carbon footprint with actual emissions figures

## Evaluation of GHG emissions – Carbon Footprint

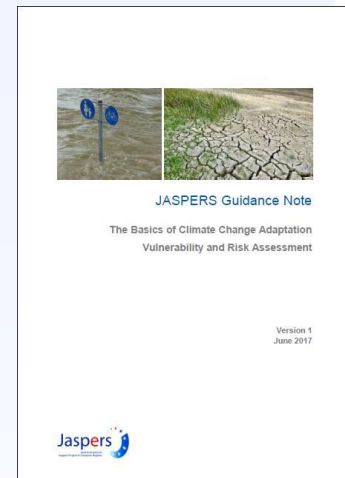
- EIB Methodologies “*European Investment Bank Induced GHG Footprint – Methodologies for the Assessment of Project GHG Emissions and Emission Variations, Version 10.1*”, EIB, April 2014
- Assessment of absolute and relative GHG emissions
- All 7 GHGs under Kyoto Protocol
- An average year of operation





## Vulnerability and Risk Assessment

- Process of managing climate risks
- Involves identifying which climate hazards the project is vulnerable to, assessing the level of risk and integrate adaptation measures to reduce that risk to an acceptable level.
- Based on sound data and forecasts
- Cover current climate variability and future climate change
- Ensure climate risks considered as part of general risk assessment

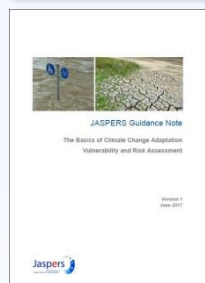


# Further Guidance Documents



## DG Climate Action – Climate Change and Major Projects

[http://ec.europa.eu/clima/publications/docs/major\\_projects\\_en.pdf](http://ec.europa.eu/clima/publications/docs/major_projects_en.pdf)



## JASPERS Guidance – The Basics of Climate Change Adaptation Vulnerability and Risk Assessment

<http://www.jaspersnetwork.org/plugins/servlet/documentRepository/displayDocumentDetails?documentId=381>



## DG Climate Action – Non-Paper – Guidelines for Project Managers – Making Vulnerable Investments Climate Resilient

[http://ec.europa.eu/clima/policies/adaptation/what/docs/non\\_paper\\_guidelines\\_project\\_managers\\_en.pdf](http://ec.europa.eu/clima/policies/adaptation/what/docs/non_paper_guidelines_project_managers_en.pdf)



## EUFIWACC – Integration of Climate Change Information and Adaptation in Project Development

[https://ec.europa.eu/clima/publications/docs/integrating\\_climate\\_change\\_en.pdf](https://ec.europa.eu/clima/publications/docs/integrating_climate_change_en.pdf)



## EIB Carbon Footprint Methodologies

[http://www.eib.org/attachments/strategies/eib\\_project\\_carbon\\_footprint\\_methodologies\\_en.pdf](http://www.eib.org/attachments/strategies/eib_project_carbon_footprint_methodologies_en.pdf)



## DG Environment – Guidance on Integrating Climate Change and Biodiversity in EIA

<http://ec.europa.eu/environment/eia/pdf/EIA%20Guidance.pdf>



## DG Environment – Guidance on Integrating Climate Change and Biodiversity in SEA

<http://ec.europa.eu/environment/eia/pdf/SEA%20Guidance.pdf>



## DG Regional Policy – Guide to Cost Benefit Analysis of Investment Projects

[http://ec.europa.eu/regional\\_policy/sources/docgener/studies/pdf/cba\\_guide.pdf](http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf)

# **Climate Change and Project Development**

—

## **Links to EIA**

## New EIA Directive:

New EIA Directive is not substantially different from old Directive in terms of how climate change should be treated.

New Directive – “Climate Change”

Old Directive – “Climatic Factors”

meaning is the same, emphasis is stronger.

EIA focuses on assessing the impact of the project on the environment. In doing that, the assessment should consider the holistic and interlinking issues of climate change, in terms of the greenhouse gas emissions of projects and also the fact that the climate is changing and this can influence the baseline environment and alter the ways in which the project may impact on the environment as a result of its vulnerability to climate change hazards.

# Integration into Project Development

## Environmental Impact Assessment

### Climate Change Adaptation

- Impact of the project on the environment's capacity to adapt (the adaptive capacity)
- Impacts related to resilience of the project (the impact of climate change on the project)

### Climate Change Mitigation

- Impact of the Project on Climate Change – e.g. greenhouse gas emissions

#### Note:

**Avoid Duplication** – if climate change adaptation vulnerability and risk assessments and/or carbon footprints of projects have already been undertaken in the development of the project, the results of such assessments need to be reflected in the EIA, no need to duplicate assessments.

# **Climate Change and Project Development — Considerations in EIA Screening**

## Characteristics of projects:

...

(e) Pollution and nuisances

(f) The risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge

To make decision, need to:

- Know the project
- Know the location environment
- Know what is likely to happen as a result of climate change
- Know the risks (not just climate risks)

## **Other relevant policies, directives and initiatives:**

Hyogo Framework for Action – UNISDR

Seveso Directive (2012/18/EU – Seveso III)

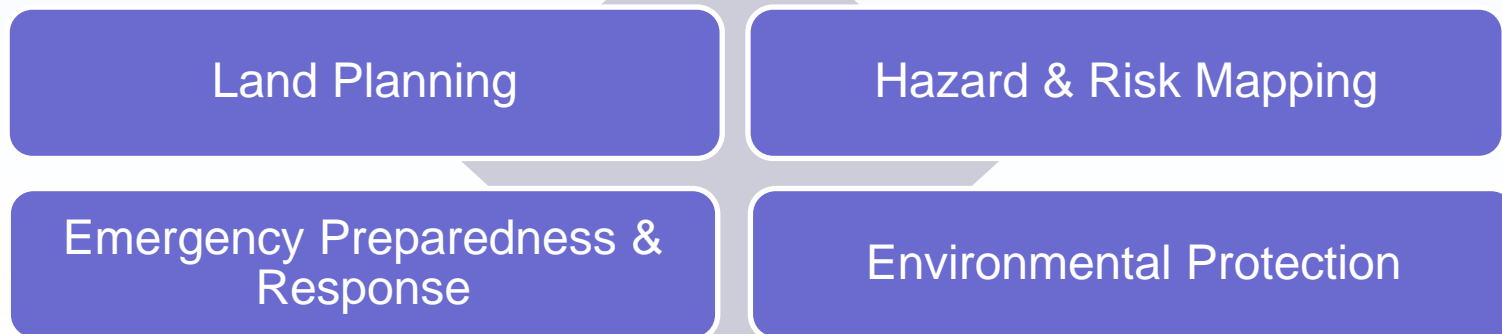
Floods Directive (82/501/EEC)

National Risk Assessments

Emergency Response Planning

Hazard and Risk Mapping

## **Coordination between authorities / departments is essential:**





## **Contact Details:**

Sarah Duff – Climate Change and Sustainability Specialist  
[duff@eib.org](mailto:duff@eib.org)

## **JASPERS Website:**

<http://www.jaspers-europa-info.org/>

## **JASPERS Networking Platform**

<http://www.jaspersnetwork.org/>