



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

Strategic Environmental Assessment for Shale Gas Development in South Africa

*Process Custodians Group Meeting
22 October 2015*

PCG Meeting #2
CSIR Pretoria – Knowledge Commons



SANBI
Biodiversity for Life



Council for Geoscience

Outline of Meeting: PCG#2

1. Welcome and Introductions
2. Adoption of previous notes (PCG#1 on 22 July) and summary of key actions
3. Brief outline of the SEA: objectives, study area, governance
4. Project Progress: Timelines and phases
5. Comments & response on author team composition and balance
6. Zero Order Draft and risk assessment approach
7. Stakeholder engagement and public outreach programme
8. Other matters and next meeting



Summary of Outcomes of Previous Meeting (22 July)

Action	Responsible party	Timeframe	Delivered
Consider and evaluate nominees to the PCG to determine whether they are appropriate. Additional nominations and responses contained in the meeting notes from 22 July.	Project Team	Mid - Aug, 2015	17 August
Provide the PCG with a “SEA Process Document” describing the detailed SEA Process, public consultation, the structure and purpose of the PCG and a timeline of meeting dates for PCG engagement.	Project Team	Mid - Aug, 2015	17 August
Provide Integrating and Contributing Specialist Authors’ composition, information and curriculum vitae to PCG members for review.	Project Team	Early - Sep, 2015	Distributed on 07 Sep. 10 days comment provided to the PCG



In brief

- South African government has made high-level public commitments to shale gas exploration
- DEA has commissioned a 24 month Strategic Assessment to provide the evidence and framework to guide such decisions
- CSIR, SANBI, CGS appointed as science consortium
- ~65 other experts involved to the SEA process, excl. Corresponding Authors and Peer Reviewers

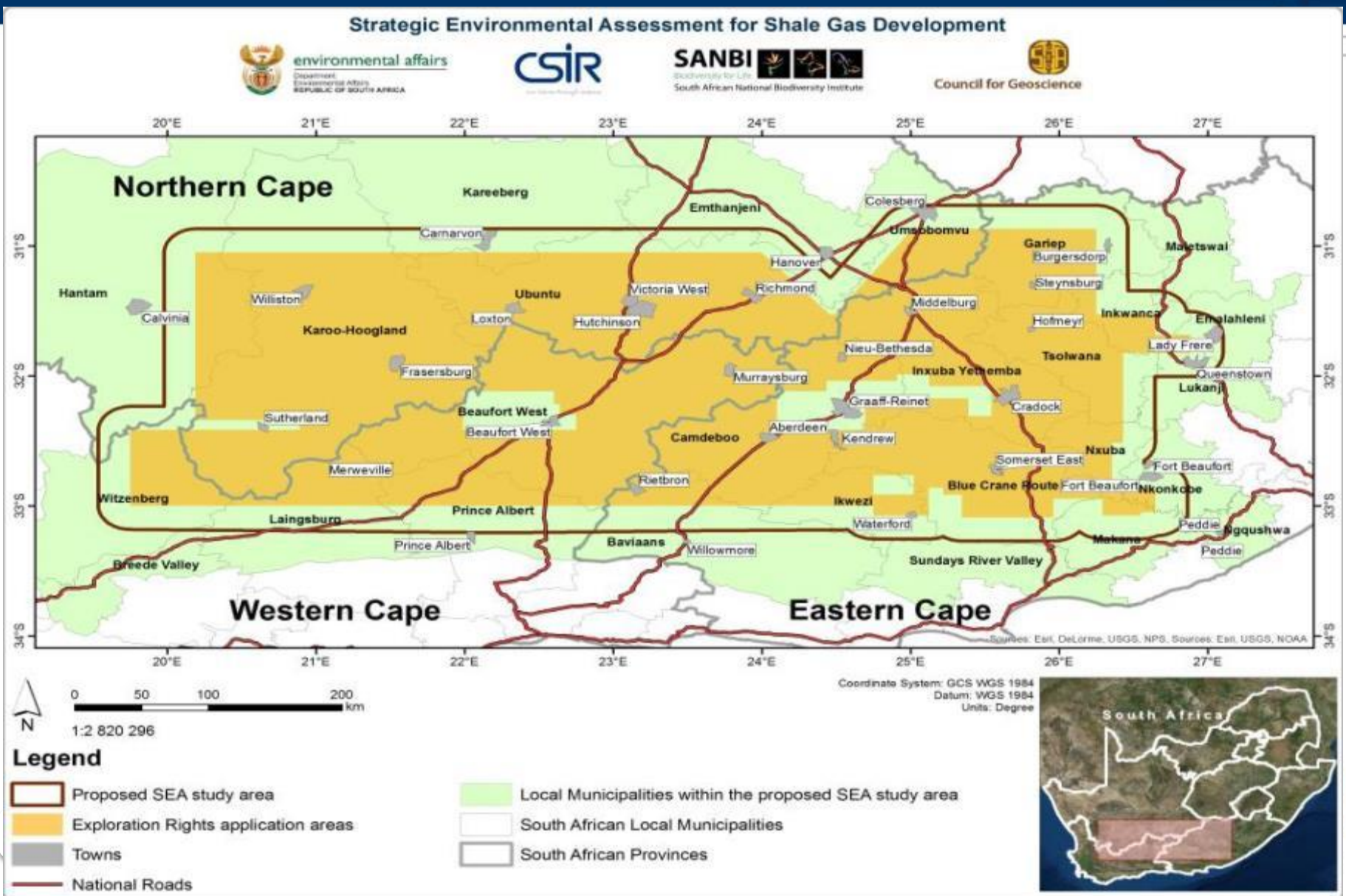


SEA objectives

- Undertake a scientific assessment drawing on all available evidence, evaluated by multiple experts
- Assess all material issues, risks and opportunities
- Identify high risk activities and regions under possible shale gas development scenarios
- Define limits of acceptable social and ecological impact at a regional scale in the study area
- Provide a decision-making framework for the regulation of shale gas applications and activities



Study Area



Project Governance cont...

Project Executive Committee 'Project management'

- Department of Environmental Affairs
- Department of Water and Sanitation
- Department of Mineral Resources
- Department of Energy
- Department of Science and Technology
- Department of Agriculture, Forestry and Fisheries
- Provincial Government Eastern Cape
- Provincial Government Western Cape
- Provincial Government Northern Cape
- The Project Team

Project Team

Specialists / Experts
+
Stakeholders

Process Custodians Group 'Process oversight'

- Department of Environmental Affairs
- Department of Performance Monitoring and Evaluation
- Department of Economic Development
- South African Local Government Agency
- PetroSA
- Business Unity South Africa
- Onshore Petroleum Agency South Africa
- AgriSA
- Treasure the Karoo Action Group
- South African Faith Communities Environment Institute
- WWF - South Africa
- Nelson Mandela Metropolitan University
- Water research Commission
- Square Kilometre Array
- Human Sciences Research Council
- South African Human Rights Commission
- International Association of Impact Assessment (Chair)

PCG Mandate

The PCG **verifies that the assessment process is credible, legitimate and salient in that:**

- The has been followed within the guidelines set out in the SEA process document;
- The author teams have the necessary expertise and show balance;
- The assessment cover the material issues;
- The identified expert reviewers independent, qualified and balanced; and
- The review comments received from expert and stakeholder reviewers have been adequately addressed and documented.



SEA Timeline and Phases

Feb 2015 Sep 2015 Oct 2016 Mar 2016

Preparation

Contracts, structures, teams, processes
Databases, Literature collation,
Information collation, GIS surfaces,
Activity & Scenarios Document

Assessment

Consider and organise information, assess and
write, review by experts, revise and
communicate, review by experts and
stakeholders, revise, publish

Decision support

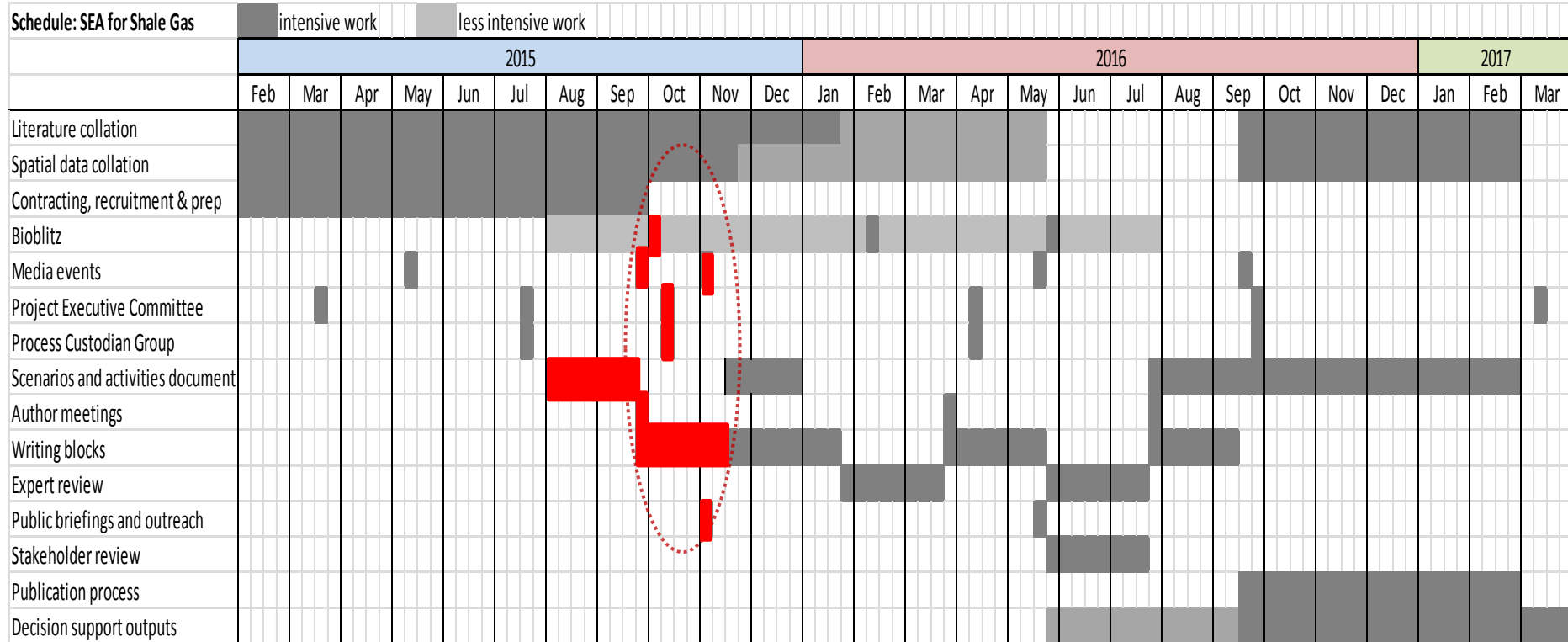
EIA guidelines, monitoring
requirements, best practice

Project Progress

Key project activities	Timeframes
Project Inception Workshop	12 Feb
Contracting and Recruitment	Feb-Sep
Establishment of SEA Governance Groups	Feb-Apr
Website and Stakeholder Portal	Feb-Apr
Online Information Database	Apr (ongoing)
Determine Strategic Issues	Feb-Mar
Formulate Author Teams (contract)	Apr-Sep
Media Launch	12 May
1st Governance Group Meetings	22 July
1st Author Team Workshop	27-30 Sept
BID and additional call for Stakeholder Registration	13 Oct
Zero Order Draft	13 Oct
2nd Governance Group Meetings	22 Oct
Scenarios & Activities Document	End-Oct
Planning for SEA Outreach	Sep-Nov
SEA Outreach	08-13 Nov



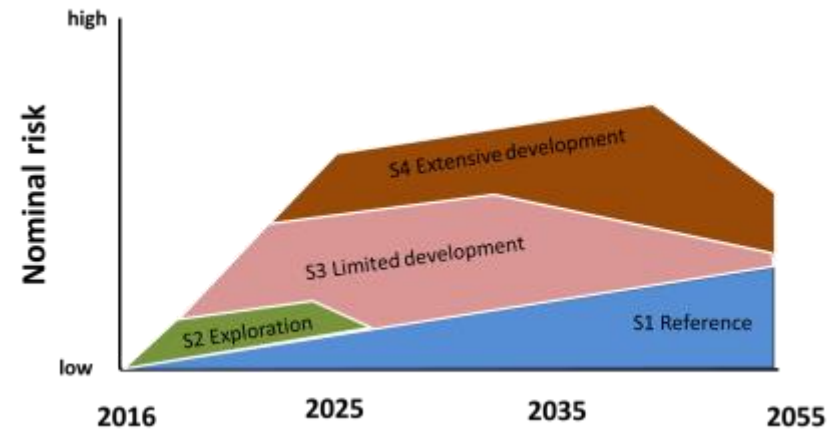
Project Progress



Project Progress: S & A Document

- Scenarios

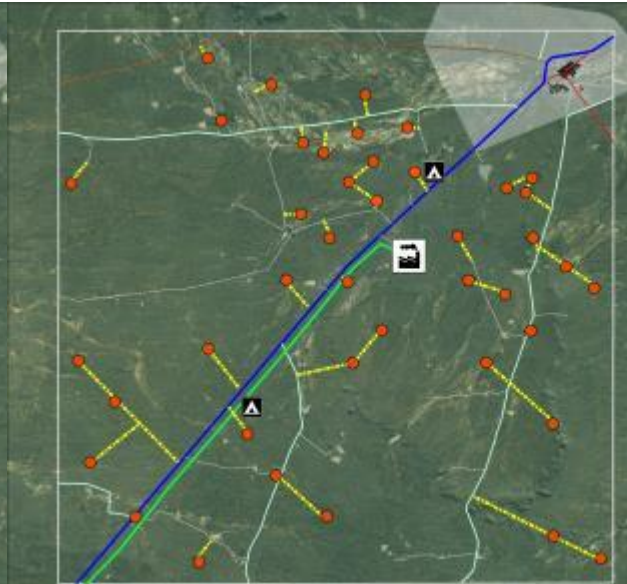
1. No shale gas exploration
2. Exploration only
3. Limited production of 5 Tcf
4. Extensive production of 20 Tcf



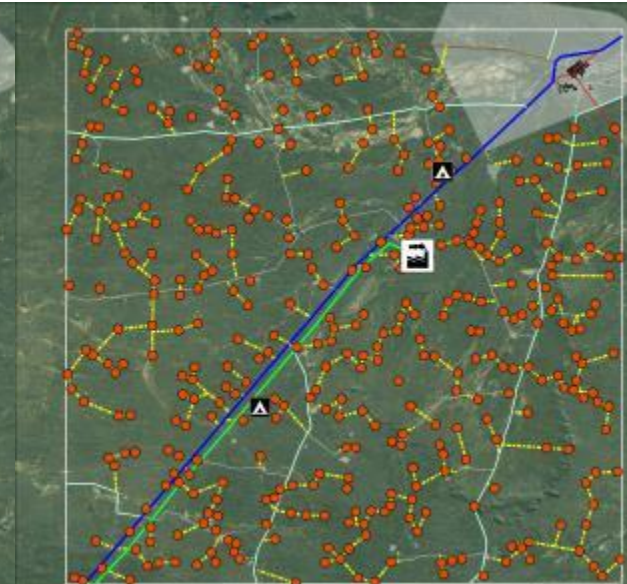
S2 Exploration



S3 Production 5Tcf



S4 Production 20Tcf



PCG Comments on Author Teams

- Has the project team addressed the comments made on the expert teams in terms of balance and expertise adequately?
 - Discussion in the PCG



Zero Order Draft (ZOD) – Scope of Work

- ZOD published on 13 October
- Governance group comments to be submitted by 06 November
- General stakeholder comments to be submitted by 20 November
- Comments will be coordinated, arranged and presented to author teams
- Republished on the project website as final ZOD end-November 2015, 1 week after the public outreach

Contents

Summary for Policymakers.....	2
Preface.....	2
Scenarios and Activities of Shale Gas Development in the Karoo.....	3
Effects on National Energy Planning and Energy Security.....	5
Air Quality and the Emission of Greenhouse Gases.....	7
Tremors and Earthquakes.....	10
Water Resources, both on the Surface and Underground.....	13
Impacts on Human Health.....	17
Biodiversity & Ecological Impacts: Landscape Processes, Ecosystems and Species.....	20
Impacts on National and Local Economic Performance.....	23
Electromagnetic Interference with Radioastronomy.....	27
Noise Generated by Shale Gas-related Activities.....	29
Impact on Sense of Place Values.....	31
Impacts on Waste Planning and Management.....	34
Impacts on Land, Infrastructure and Settlement Development.....	37
Impacts on Agriculture.....	40
Impact on Cultural Heritage.....	44
Impacts on Tourism in the Karoo.....	47
Impact on Visual Aesthetics.....	50
Impact on Social Fabric.....	53

Contents

Summary for Policymakers.....	2
Preface.....	2
Scenarios and Activities of Shale Gas Development in the Karoo.....	3
Effects on National Energy Planning and Energy Security.....	5
Air Quality and the Emission of Greenhouse Gases.....	7
Tremors and Earthquakes.....	10
Water Resources, both on the Surface and Underground.....	13
Impacts on Human Health.....	17
Biodiversity & Ecological Impacts: Landscape Processes, Ecosystems and Species.....	20
Impacts on National and Local Economic Performance.....	23
Electromagnetic Interference with Radioastronomy.....	27
Noise Generated by Shale Gas-related Activities.....	29
Impact on Sense of Place Values.....	31
Impacts on Waste Planning and Management.....	34
Impacts on Land, Infrastructure and Settlement Development.....	37
Impacts on Agriculture.....	40
Impact on Cultural Heritage.....	44
Impacts on Tourism in the Karoo.....	47
Impact on Visual Aesthetics.....	50
Impact on Social Fabric.....	53

Zero Order Draft - Structure

Topic – e.g. Tremors and Earthquakes

1.) Executive Summary

2.) Introduction and Scope

- 2.1) What is meant by this topic?*
- 2.2) Overview of International Experience*
- 2.3) Special Features of the Karoo Environment*
- 2.4) Relevant Legislation, Regulation and Practice*

3.) Key potential Impacts and their Mitigation

4.) Risk Assessment

- 4.1) How the Risks (and Opportunities where appropriate) are measured*
- 4.2) Limits of Acceptable Change*
- 4.3) Risk Assessment*

5.) Best Practice Guidelines and Monitoring Requirements

- 5.1) Planning*
- 5.2) Construction*
- 5.3) Operations*
- 5.4) De-Commissioning*
- 5.5) Monitoring and Evaluation*

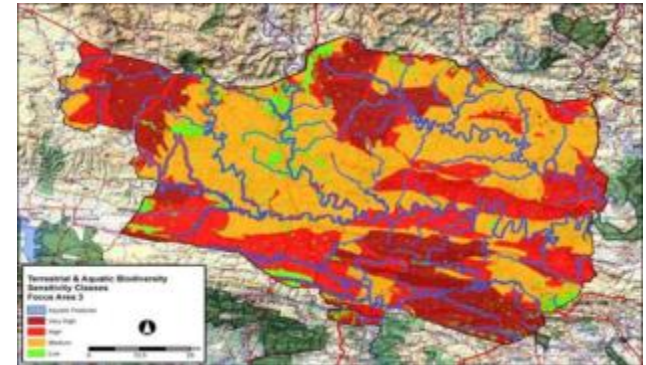
6.) Topic on which information is inadequate for decision-making

7.) References



Risk Assessment: Step by step

1. Define the nature of the impact
2. Map substantially different receiving environments
3. Define and list mitigation technologies, rules, institutions
4. Define consequence levels (slight, moderate...extreme)
 - a) What proxy indicators can you use?
 - b) What established norms/standards exist
 - c) Link to levels of acceptable change.
5. For each impact type
 - a) For each scenario
 - 1.) For each unique area
 1. Estimate likelihood over entire scenario, at area scale
 2. Estimate consequence level
 3. From 1 x 2 the risk level emerges: test it against your instincts and experience
 - 2.) Repeat 5.1.1 with mitigation as specified in 3
6. Project team will use the tabulated outputs of (5), with the map in (2) to create a risk surface for each impact type
7. Project team will create a composite risk map using the maximum rule applied to the with mitigation surfaces, and another risk map without mitigation.



Feedback on Public Engagement

- Interactive website, email, and telephonic correspondence
- Media launch 12 May in Parliament ~40 newspaper articles
- DEA awareness campaign 13 September in national newspapers
- CSIR awareness campaign September-October (BID)
- ~ 100 stakeholders registered on the stakeholder database receiving project updates, presentations, documents for comment
- ZOD released on project website for stakeholder comment from 21 Oct - 20 Nov
- Two rounds of public outreach planned. 1st starts 08-13 November
- DEA adverts in 1x EC, NC, WC and 1 x national newspapers
- Provincial engagement e.g. the Western Cape Shale Gas Forum
- Shale gas SEA video end-2015



Public Outreach Programme: Rounds 1 & 2

Outreach plan for the SEA over Rounds 1 & 2

Round 1: SEA process and scope of work, 09 - 13 Nov 2015

- Release ZODs for comment on website and to registered stakeholders
- 3 x briefing meetings in EC, NC & WC (public meetings open to all, advertised accordingly)
- 1 x workshop meeting in Cape Town with registered stakeholders, stakeholders requested to send delegates
- Close comments on ZODs, comments to be considered but not responded to individually.

Round 2: Draft Assessment findings, ~May 2016

- Release draft assessment findings for comment on website
 - 3 x briefing meetings in EC, NC & WC (public meetings open to all, advertised accordingly)
 - 2 x workshop meetings in Cape Town and Pretoria (proposed) with registered stakeholders, stakeholders requested to send delegates
 - Close comments on draft assessment, comments to be responded to individually (where provided appropriately).
- Publish final assessment on website for multiple users



WHAT ENVIRONMENTAL, SOCIAL AND ECONOMIC ASPECTS WILL BE ASSESSED?

The SEA will assess all the material related, environmental and biological risks and opportunities of the industry. During the SEA these aspects will be referred to **STRATEGIC ISSUES** (Figure 2).



Figure 2. Strategically issue the bill for approval in the 100th.

Public Outreach Programme Round 1

Province	Town	Venue	Date and Time	Participation
Eastern Cape	Graaff-Reinet	Masizakhe Community Hall, Baartman Square	Mon 9 November 16:00 - 19:00	Public briefing
Northern Cape	Victoria West	Victoria-West Town Hall, Church Street	Tue 10 November 16:00 - 19:00	Public briefing
Western Cape	Beaufort West	Rustdene Community Hall, de Vries Street	Wed 11 November 16:00 - 19:00	Public briefing
Western Cape	Cape Town	Iziko Museum, Paddock Ave	Fri 13 November 10:30 - 15:30	Registered stakeholder



Outreach Round 1 Itinerary



Other Agenda Items

- Feedback to the Project Executive Committee?
- Assistance with registering new stakeholders
- Representation of the PCG at Outreach#1?
- Next meeting:
 - April 2016, Peer Review following First Order Draft





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

Thank you

<http://seasgd.csir.co.za/>



SANBI
Biodiversity for Life



Council for Geoscience