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EXPLORING STAGES/PHASES AND GATES AS A PROJECT MANAGEMENT APPROACH FOR SOUTH AFRICAN CLEAN DEVELOPMENT MECHANISM PROJECTS

by

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Title of thesis	Exploring Stages/Phases and Gates as a Project Management Approach for South African Clean Development Mechanism Projects
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Abstract

Climate change is a global problem that is at least partially caused by human induced greenhouse gas emissions. Various initiatives were developed in the 1990's to incentivise greenhouse gas emission reductions below legal limits. One of these systems is the Kyoto Protocol's Clean Development Mechanism (CDM). In these incentive schemes parties can sell (the Seller) their greenhouse gas emission reductions to other parties (the Buyer) who need to offset their emissions. Emission reduction incentivised projects have technical aspects, financial aspects and regulatory requirements. The complexity of emission reduction schemes are further increased due to the levels of scrutiny and diverse sources of scrutiny that a project undergoes.

As a developing country South Africa (SA) has a lot to gain by the successful implementation of CDM projects. Unfortunately very few successful CDM projects exist in South Africa. It was then the aim of this research to explore why there are so few projects and what are the current CDM project management approaches followed for CDM projects in SA?

During the investigation aspects of the project management landscape of SA CDM projects were structured by means of a stage/phase and gate approach. This was done to aid in addressing the specific requirements of CDM projects and to combine this with the limited real world experience of successful CDM projects in SA. A stage/phase-gate model was developed because of the

model's ability to manage risk per stage/phase and overall risks, as well as the ability of these models to assist in portfolio management.

Various research methods were used to develop the final proposed stage/phase and gate project management model (Model β). These methods included over and above literature reviews:

- Two rounds of questionnaires to develop the model;
- Interviews with individual experts through identified cases to validate the first version of the model; and
- Interaction with the South African Clean Development Industry Association to validate the second version of the model.

Model β should not be seen as a stationary model. The model should rather be adapted by each emission reduction project developer to suit the developer's company specific requirements. Furthermore the evolving regulatory environment of emission reduction systems will lead to the continued adapting and updating of Model β. The model could then be useful for:

- Project developers to plan and execute their projects; and
- Buyers or Investors in projects as to quickly ascertain current project status and progression.

It is envisaged that applying Model β, or a derivative, will:

- Manage risk due to increased project management through a stage/phase and gate approach;
- Decrease project development time and ensure all required outputs are achieved quicker; and
- Due to decreasing development time, costs could be managed better.

Keywords:
emission reduction incentive, project management, stage/phase-gate

Declaration

I declare that this thesis, which I hereby submit for the degree Philosophiae Doctor (Engineering Management) at the University of Pretoria, is my own work and has not been previously submitted by me for a degree at another university.

	2011-01-04
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Marco Lotz	Date

Acknowledgements and Dedications

"I dedicate it to all the kids and adults out there that have ever been picked on or made to feel inadequate."
Korn, MTV Unplugged
(Introduction to Creep)

"For with much wisdom comes much sorrow, the more knowledge, the more grief."
Ecclesiastes 1:18

To thank:

As a student I was historically constantly reminded of the pecking order of an academic institution. The lower one finds oneself in this pecking order the longer it takes to obtain feedback from the academic staff. This was not the case with Alan (Professor Brent). As a student there is then no greater compliment than to say that I got quick feedback irrespective of Alan's work load or where he found himself in the world. The feedback provided was also of value and aided in completion of this research. I can then recommend Alan as a promoter to other students and can only hope that we work together in the future.

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To the administrative staff at the University of Pretoria for doing an unappreciated job exceptionally well. Marlene Mulder is especially thanked for her efforts.

On a personal note:

This PhD was done to repay a debt - a debt to my friends that did not have the opportunity of tertiary education. Some did not have the financial means or stable family life that enables one for further education. Some simply did not have the ability. I would like to name you to eternalize you in the same sense that this work is now eternalized, but you are not the type of people who ever sought public recognition. In your small town lives with small dreams you found serenity not attainable by academic or financial success. This I realize

now. I consider each time I struggled during this research as an insult to you. For insulting you I humbly apologize.

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Looking back over the years some of the best memories involved my grandparents. When I thought about it the memories were so great because my grandparents never confined my thinking to reality and my imagination could roam free. An unattainable dream then became a mere thought away. In the same sense a PhD is considered by most to be so exclusive and so unattainable. The reality was that it was then only a thought away. The dreaming then propagated quite naturally into adulthood. This I owe to my grandparents.

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To the friends that passed away. I will never forget you, but I have to move on. I have to silence my demons because nothing buried alive will ever die.

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List of Abbreviations

CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP	Conference Of the Parties
DME	Department of Minerals and Energy, replaced by Department of Energy
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
GHG	Green House Gas
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
PIN	Project Identification Note
PMBOK	Project Management Body of Knowledge
PP	Project Proponent
SA CDM IA	South African Clean Development Mechanism Industry Association
SD	Sustainable Development
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified/Voluntary Emission Reduction