

LAND COURT OF QUEENSLAND

REGISTRY: BRISBANE
NUMBER: MRA428-14, EPA429-14
MRA430-14, EPA431-14
MRA432-14, EPA433-14

Applicant: ADANI MINING PTY LTD
AND
First Respondent: LAND SERVICES OF COAST AND COUNTRY INC.
AND
Second Respondent: CONSERVATION ACTION TRUST
AND
Statutory Party: CHIEF EXECUTIVE, DEPARTMENT OF ENVIRONMENT AND HERITAGE PROTECTION

AFFIDAVIT OF JONATHAN GEOFFREY STANFORD

I, Jonathan Geoffrey Stanford, Director, Insight Economics Pty Ltd, Level 1, 530 Lt Collins Street, Melbourne in the State of Victoria, affirm as follows:

- 1 I am a director of Insight Economics Pty Ltd and have been since 2010. I have been a consultant in areas of economics and policy issues related to climate change, energy, the resources sector, industry development and defence since the mid-1990s.
- 2 I have been engaged by McCullough Robertson, on behalf of the Applicant, to appear as an expert witness in these proceedings in relation to issues raised in the objections to the Applicant's mining lease applications and environmental authority applications for the Carmichael Coal Mine project (**Objections**).

Page 1



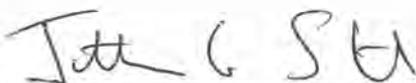
Deponent


Taken by:
Solicitor /-Justice of the Peace

Affidavit
Filed on behalf of the Applicant
Form 46 R.431

McCullough Robertson Lawyers
Level 11 Central Plaza Two 66 Eagle Street
BRISBANE QLD 4000
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GPO Box 1855, BRISBANE QLD 4001
Ref: CEM:GMR:PWS:159359-00022

- 3 My curriculum vitae is attached to the individual expert report referred to below. I refer to my curriculum vitae and say that I have provided expert evidence to a number of matters of dispute relating to economic and policy issues related to climate change, energy and resources sector and industry development policy. These include:
- (a) expert evidence on behalf of Xstrata Coal Queensland in relation to the proposed Wollombi Coal Mine in the Land Court of Queensland's (*Queensland Conservation Council Inc v Xstrata Coal Queensland Pty Ltd & Ors* [2007] QLC 0128);
 - (b) expert evidence on behalf of Xstrata Coal Queensland in relation to the proposed Wandoan Coal Mine in the Land Court of Queensland (*Xstrata Coal Queensland Pty Ltd & Ors v Friends of the Earth – Brisbane Co-Op Ltd & Ors, and Department of Environment and Resource Management* [2012] QLC 013); and
 - (c) expert evidence on behalf of GVK Hancock in relation to the proposed Alpha Coal Mine in the Land Court of Queensland (*Hancock Coal Pty Ltd v Kelly & Ors and the Department of Environment and Heritage Protection (No.4)* [2014] QLC 12).
- 4 I previously prepared a joint report with Tim Buckley addressing issues relating to energy markets and financial analysis in relation to the Carmichael Coal Mine (**Climate Change Economics Joint Report**).
- 5 I have been further asked to prepare an individual report in relation to whether, in respect to energy markets insofar as they relate to climate change, good reason exists to favourably recommend the application for these mining leases, and in relation to any issues raised within my area of expertise by points of difference between experts. Exhibited to my Affidavit and marked 'JS-1' is a true copy of my report dated 6 February 2015 (**Individual Report**).



Deponent



Taken by:
Solicitor / Justice of the Peace

6 Pursuant to rule 428(3) *Uniform Civil Procedure Rules 1999* (Qld), I confirm that:

- (a) the factual matters stated by me in the Joint Report and my Individual Report are, as far as I know, true;
- (b) I have made all enquiries considered appropriate;
- (c) I genuinely hold the opinions stated by me in the Joint Report and in my Individual Report;
- (d) my Individual Report contains reference to all matters that I considered significant; and
- (e) I understand my duty to the court and I have complied with this duty.

7 All the facts and circumstances deposed to in this affidavit are within my own knowledge except those stated to be on information and belief. I have, as required, set out the basis and source of my knowledge or information and belief.

All the facts affirmed in this affidavit are true to my knowledge and belief except as stated otherwise.

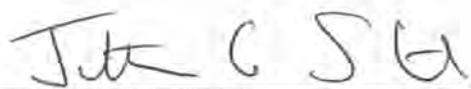
Affirmed by Jonathan Geoffrey Stanford

at Brisbane

this 12th day of March 2015

Before me:


A _____
A Justice of the Peace/Solicitor


A _____

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CERTIFICATE OF EXHIBIT

Exhibit '**JS-1**' to the affidavit of Jonathon Geoffrey Stanford affirmed 12th day March 2015.



Signed:
Deponent



Taken by:
Solicitor / ~~Justice of the Peace~~ /
Commissioner for Declarations

Expert Report to the Land Court by Jon Stanford

1 **1. Expert's Details & Qualifications**

2 **1.1 Name**

3 My name is Jonathan Geoffrey Stanford.

4 **1.2 Address**

5 My business address is:

6 Director

7 Insight Economics Pty Ltd

8 1/530 Little Collins Street

9 Melbourne 3000

10 My email address is: jon.stanford@insighteconomics.com.au

11 **1.3 Qualifications and expertise**

12 My area of expertise relates to the economic and public policy issues relevant to
13 government strategies to address climate change as well as a strong
14 understanding of Australia's resources and energy sector.

15 I am sufficiently expert to make this statement because I have had 20 years
16 experience in addressing the economic and policy issues surrounding climate
17 change and energy markets. Within government, I was involved in these issues
18 as a senior official in the Department of the Prime Minister and Cabinet in the
19 early to mid 1990s. In that position, I was Chair of the Commonwealth
20 Government's inter-departmental committee on climate change and of the
21 Intergovernmental Committee on Ecologically Sustainable Development. Since
22 then, as a Director of two consultancy firms, Insight Economics and previously
23 the Allen Consulting Group and as a founding partner in Deloitte Economics, I
24 have undertaken a number of major assignments on climate change issues for
25 the Commonwealth government, various State governments and private sector
26 interests. These projects have variously involved economic modelling of the likely
27 impact of possible policy initiatives to address climate change and an analysis of
28 alternative policy approaches. In 2009-10, I spent over twelve months on a major
29 project as Climate Change Adviser to the Chief Minister of the Northern Territory
30 and his government more generally. Over the last few years, I have also
31 contributed a large number of articles on climate change policy issues to the
32 opinion pages of *The Australian Financial Review* and addressed the issue in
33 many conference presentations.

34 In addition, I have worked extensively on energy issues. Both in government and
35 afterwards, as a consultant, I chaired the Commonwealth-State process that led
36 to the development and national endorsement of the National Gas Code. In
37 recent years I have written extensively on energy policy, particularly in the context
38 of addressing climate change, and have worked recently on a project for a State
39 government on options for electricity generation in a carbon constrained world.

40 **Annexure A** to this report is my curriculum vitae, which sets out details of my
41 professional qualifications.

42 **2. Instructions**

43 I have been instructed by McCullough Robertson on behalf of Adani Mining Pty
44 Ltd to formulate a report in response to objections around the issues of climate
45 change policy and global energy markets. The full detail of these instructions is
46 included at **Annexure B** to this report.

47 This individual report follows a joint report between Tim Buckley and myself,
48 executed on 30 December 2014. The current report further addresses those
49 particular issues in the joint report where there was a lack of agreement between
50 Messrs Buckley and Stanford. These matters mainly relate to different views of
51 the future global market for thermal coal. In addition, this individual report
52 addresses other issues raised by the Objectors within my area of competence. In
53 general, these issues relate to whether, in the context of the global policy
54 approach, prohibiting the development of a coal mine would be an appropriate
55 way to address the problem of climate change.

56 **3. Factual Information**

57 In producing this report, I have relied on factual information from a large number
58 of sources. I have referenced this material throughout the text in Section 4 of this
59 report.

60 **4. Opinion and Findings**

61 **Climate change**

62 **4.1 *Please state your opinion in response to the assertion in the LSCCI's***
63 ***objections that '(i)t has not been adequately demonstrated that the***
64 ***mine will not increase the likelihood, severity and longevity of the***
65 ***environmental harms that will result from climate change'.***

66 One of the main objections to the Carmichael mine proceeding is based on the
67 presumption of significant damage to Queensland's physical environment. This,
68 in turn, rests partly on the view that the development and operations of the
69 proposed mine together with the transportation and combustion of the coal will
70 lead to emissions of greenhouse gases being higher than they otherwise would
71 have been and thereby contribute to dangerous climate change. This issue is
72 raised in the objections by the LSCCI and CAT.

73 This goes to two important questions:

-
- 74 • Whether the activities of the proposed mine will directly or indirectly lead
75 to global greenhouse gas emissions being higher than they otherwise
76 would have been
- 77 • Whether the prohibition of a proposed coal mine in Australia would be an
78 efficient and effective policy measure for addressing climate change.

79 These two issues are addressed below.

80 **Likely impact of the Carmichael mine on emissions of greenhouse gases**

81 It is quite clear that the development of the Carmichael mine and its operations
82 will give rise to significant emissions of greenhouse gases. These will
83 overwhelmingly arise from the Scope 3 emissions associated with the transport
84 and combustion of coal from the mine. The joint expert report produced by
85 Professor Malte Meinshausen and Dr Chris Taylor demonstrates that the carbon
86 dioxide emissions produced as a consequence of the combustion of the coal will
87 be very substantial over the life of the mine.

88 There is no dispute, therefore, that very substantial emissions of greenhouse
89 gases, mainly through the subsequent combustion of the coal, will be associated
90 with the mine if it goes ahead. Despite this, a major issue, however, is whether
91 the development and commissioning of the Carmichael mine would have any
92 material impact on **net** emissions of greenhouse gases and therefore on the rate
93 of climate change. For example, there would be no significant impact on global
94 emissions from the coal sector if the volumes of supply and combustion of coal
95 did not change as a result of the prohibition of the Carmichael mine.

96 In my view this would be the case because it is the global **demand** for coal that
97 determines how much coal is produced and combusted worldwide. Therefore, if
98 coal is not produced in Australia to meet this demand it will be supplied from
99 somewhere else, and there will thus be no material impact on global emissions of
100 greenhouse gases if the production of coal in Australia were to be constrained.

101 In this context, it should be noted that, according to the World Coal Association
102 there are abundant resources of coal worldwide and, hence, many alternative
103 sources of supply to Australian mines. Germany's *Bundesanstalt für*
104 *Geowissenschaften und Rohstoffe*, for example, estimates that there are 1,004
105 billion tonnes of coal reserves available, equivalent to 130 years of production at
106 2011 levels.¹ Data produced by the US Energy Information Administration
107 suggests that while Australia's coal endowments are extensive, they amount to
108 less than nine per cent of global reserves.²

109 While the Australian coal industry is a very efficient producer, it does not
110 dominate the global market. Indeed, although the domestic coal industry has
111 exhibited strong growth, in *relative* terms it may already be falling behind other

¹ World Coal Association, 'Coal Statistics', <<http://www.worldcoal.org/resources/coal-statistics/>>

² US Energy Information Administration, 'International Energy Statistics',
<<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=6>>

112 countries. Australia ranks fifth in overall coal production (metallurgical and
113 thermal coal), accounting for 5.9 per cent of the global total in 2013.³ In terms of
114 the world's largest producers of thermal (steaming) coal, however, Australia is not
115 ranked in the top five. In 2012, the production of thermal coal in the USA and
116 India was far higher than in Australia, while Indonesia's thermal coal production
117 was double that of Australia. China's production of thermal coal was over 12
118 times as great as Australia's output (Exhibit 1).

119 **Exhibit 1: Major Thermal Coal Producing Countries (2013)**

Country	Production (Mt)
China	3,034
USA	756
India	526
Indonesia	486
South Africa	255
AUSTRALIA	239
Russia	201
Kazakhstan	103
Colombia	81
Poland	65

120 Source: World Coal Association, 'Coal Statistics', < [http://www.worldcoal.org/resources/coal-](http://www.worldcoal.org/resources/coal-statistics/)
121 [statistics/](http://www.worldcoal.org/resources/coal-statistics/)>

122 Until very recently, Australia was ranked first in terms of coal exports. But in
123 recent years, Indonesia has recorded a very rapid growth in exports
124 (overwhelmingly in thermal coal) and has overtaken Australia. Coal exports from
125 Indonesia more than doubled between 2008 and 2013, compared with a 33 per
126 cent increase from Australia. Both the USA and Russia have also been
127 increasing their coal exports at a faster rate than Australia (Exhibit 2). The
128 message from this is that Australia is by no means the only country in which
129 investors can develop new coal mines for export. Other countries certainly have
130 the capacity to take over coal production displaced from the Australian industry
131 as a consequence of policy-driven carbon leakage or a wider decline in
132 competitiveness.

³ World Coal Association, <http://www.worldcoal.org/resources/coal-statistics/>

Exhibit 2: Major Coal Exporting Countries by Volume

Country	Exports, 2013(Mt)	Exports, 2008(Mt)	Growth 2008-13(%)
Indonesia	426	203	110
AUSTRALIA	336	252	33
Russia	141	101	40
USA	107	74	45
Colombia	74	74	0
South Africa	72	62	16

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Source: World Coal Association, 'Coal Statistics', < <http://www.worldcoal.org/resources/coal-statistics/>>

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According to the Australian government agency ABARE, both Indonesia and Mongolia have the capacity to increase their exports substantially.⁴ Russia, South Africa and Kazakhstan are also potential rivals. In none of these countries, as far as I am aware, is there any significant questioning of the legitimacy or acceptability of the coal industry. In my opinion, these countries generally have less rigorous approvals processes for new projects, less of an emphasis on environmental protection and lower labour costs than Australia. In the past, Australia possessed a significant relative advantage as a destination for investment because of its low political risk. But in recent times, sustained political stability in nations such as Indonesia is likely to have reduced the value of this advantage.

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It is important to note that this issue has arisen before in the Land Court. I have given similar evidence to the Court on climate change on a number of occasions, most recently in relation to Hancock's proposed development of the Alpha mine in the Galilee Basin (*Hancock Coal Pty Ltd v Kelly & Ors and Department of Environment and Heritage Protection (No. 4)* [2014] QLC 12). In that case, following evidence from expert witnesses, Hancock made a reply submission in which they argued forcibly that aggregate greenhouse gas emissions arising from the mining and combustion of coal were related to the demand for coal and that banning mine development in Australia would have no net effect on the level of those emissions. In his judgement on the case, the Member stated that:

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"I agree with Hancock's reply submissions. This has the result that, even if both myself and President MacDonald are wrong in our assessment of the proper methods for dealing with climate change under the MRA and the EPA, the evidence above would necessarily lead to the conclusion that global Scope 3 emissions will not fall if Alpha does not proceed as the coal will simply be sourced from somewhere else.

⁴ ABARE and Geoscience Australia, *Australian Energy Resource Assessment 2010*, page 151, <http://adl.brs.gov.au/data/warehouse/pe_aera_d9aae_002/aera.pdf>

164 "Put another way, it is the demand for electricity to the extent that it is met by
165 coal-fired generators that causes the Scope 3 emissions, and the facts as set out
166 in this case clearly show that Alpha is but one of a myriad of suppliers, both local
167 and around the world, who will seek to meet this existing demand.

168 "I can sympathise with the position of the objectors who see GHG emissions
169 rising, and the likely adverse climate change consequences that will flow should
170 nothing be done to alter the course that the world is heading down. I have no
171 reason to doubt the eminent expert evidence that was presented in this case to
172 that effect. However, I must on the evidence of this case determine that it is the
173 demand for coal-fired electricity, and not the supply of coal from coal mines,
174 which is at the heart of the problem."⁵

175 **Policy approaches to addressing climate change**

176 The implication of the objection from the LCCSI, *inter alia*, is that prohibiting the
177 development of the Carmichael mine would be an appropriate policy approach to
178 addressing climate change. In my opinion, such an approach would be neither an
179 efficient nor an effective approach to addressing climate change and therefore
180 would represent bad policy.

181 It is clear from the joint report by Professor Meinshausen and Dr Taylor that the
182 quantum of emissions attributed to the construction and operations of the
183 proposed Carmichael mine over the life of the project are overwhelmingly
184 dominated by Scope 3 emissions, relating to the combustion of the coal for the
185 purpose of generating electricity. Yet since the coal from the Carmichael mine is
186 going to be exported, these emissions will occur not in Australia's jurisdiction but
187 in the countries that import the coal. In effect, supporters of a policy of prohibiting
188 the development of new coal mines, including Carmichael, in the Galilee Basin
189 are seeking to prevent Scope 3 emissions in other countries. In terms of
190 international protocols to which Australia is a party, this is an idiosyncratic
191 approach to addressing climate change that is outside the mainstream of global
192 policy and is not pursued by any other country.

193 This is a very important point because, as Professor Ross Garnaut has frequently
194 suggested, addressing climate change is a "diabolical policy problem".⁶ The
195 policy difficulties and complexities are evident in many dimensions, a major one
196 being that greenhouse gas (GHG) emissions know no borders and so an
197 equitable global policy framework is required. Presently, the global agenda for
198 addressing climate change, which has been developed over 25 years, is based
199 on the nations of the world taking responsibility for reducing global gas emissions
200 that occur within their own jurisdictions. Australia's obligations under the United
201 Nations Framework Convention on Climate Change (UNFCCC) and the Inter-
202 governmental Panel on Climate Change (IPCC) require the Australian
203 Government to measure and report its GHG emissions on a regular basis.

⁵ Land Court of Queensland, *Hancock Coal Pty Ltd v Kelly & Ors and Department of Environment and Heritage Protection (No. 4)* [2014] QLC 12. Judgement, pages 99-100.

⁶ See for example, Ross Garnaut, 'A Diabolical Policy Problem'. Paper presented to the Festival of Ideas, Melbourne, 16 June, 2009.
<<http://www.rossgarnaut.com.au/Documents/Festival%20of%20Ideas%20Ross%20Garnaut%20160609.pdf>>

204 Importantly, neither of the reporting protocols requires a national government to
205 report third party or Scope 3 emissions. For example, Australia is not required to
206 measure and report the emissions that occur in other national jurisdictions as a
207 result of the combustion of coal exported from Queensland. While these are
208 Scope 3 emissions from an Australian perspective, they become Scope 1 or
209 Scope 2 emissions in the location where the coal is combusted and they
210 therefore become the reporting responsibility of the country that imports and uses
211 the coal.⁷ If coal mined in Australia is used to generate electricity domestically, for
212 example, the emissions from combusting that coal are reported by and within
213 Australia. This is because while they represent Scope 3 emissions as far as the
214 mine is concerned, they represent Scope 1 emissions to the electricity generator
215 and are reportable as such.

216 In order to be **efficient**, a policy directed towards reducing GHG emissions in
217 Australia must ensure that the cost of emissions abatement is minimised. An
218 important element in this is the need to ensure that policies to reduce emissions
219 are consistent with those being applied by the international community. If
220 Australia adopts policy approaches to emissions reductions that are more
221 stringent than those of other countries, there will be negligible benefits in terms of
222 ameliorating climate change (because substantial global action is required) but
223 material costs to the Australian economy and community because of 'carbon
224 leakage'. Carbon leakage refers to the migration of investment and jobs to
225 countries that pursue less ambitious policies to address climate change.

226 Banning a coal mine would not be an efficient means of addressing climate
227 change. It would merely result in the transfer of potential investment and jobs
228 from Australia to other locations, while having no impact on global emissions, as
229 discussed below.

230 In terms of the **effectiveness** of an approach based on prohibiting new coal
231 mining investments, it would almost certainly be quite ineffective and possibly
232 even counter-productive because of carbon leakage. Coal is a commodity for
233 which there is a high and growing demand in the world economy, as is evidenced
234 by the considerable increase in its global production in recent years. Global
235 reserves of coal are very substantial and, in contrast to resources such as
236 uranium, where Australia accounts for a major share of global reserves, Australia
237 only has less than nine per cent of the world's black coal reserves.⁸ In addition,
238 despite being one of the world's largest coal exporting countries, as shown above
239 Australia ranks only seventh in thermal coal production.

⁷ See, for example, Department of Energy and Climate Change, UK (2009), *Guidance on how to measure and report your greenhouse gas emissions*.

<https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69282/pb13309-gho-guidance-0909011.pdf>

⁸ US Energy Information Administration, 'International Energy Statistics',

<<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=6>>

240 If Australian governments take action effectively to reduce the supply of coal,
241 therefore, there is no evidence at all that this would constrain global production of
242 the commodity. Global demand for coal will not change as a result of Australia's
243 actions and the requirements of the market could readily be supplied from
244 somewhere else. On the other hand, shifting production overseas would impose
245 costs on the Australian community in terms of lost jobs and investment (carbon
246 leakage). These costs would not be offset by any material benefits in terms of a
247 positive impact on climate change.

248 In fact, shifting production overseas could even make the situation in regard to
249 emissions worse because the quality of coal from sources other than Australia is
250 often lower with a higher carbon footprint. According to an article in *Australian*
251 *Mining*: "Australian thermal coal exports are of extremely high quality, with NSW
252 and Queensland black thermal coal exports generally reporting an energy content
253 above 5500 Kcal/kg, which compares favourably to Indonesian coal which has an
254 estimated range of between 4200 and 5200.⁹ As I suggest under section 4.6
255 below, the quality of coal mined in India, in terms of its calorific value, is generally
256 significantly lower than that of Australian thermal coal.

257 In the words of the Alpha mine judgment in the Land Court of Queensland, cited
258 above:

259 "Clearly, the possibility of dire consequences from climate change is a matter
260 which falls to be addressed by the international community and the Federal
261 Government. Even if it were within the jurisdiction of this Court (which apart from
262 "Public Interest" principles I have found it not to be) then the clear and
263 unambiguous facts of this case show that there will be no reduction of GHGs if
264 the Alpha mine is refused, and, indeed, depending on the source of replacement
265 coal, such replacement coal may well, on the evidence, result in an increase in
266 GHG emissions."¹⁰

267 Refusing to approve proposed coal mines, therefore, would not be consistent with
268 an appropriate policy for Australia. Such an approach would:

- 269 • Be clearly at odds with the federal government's policy objective of using a
270 voluntary 'direct action' program as the primary measure to address
271 climate change
- 272 • Single out coal mines for special, discriminatory treatment even though
273 their emissions in the production process are not particularly high
- 274 • If adopted because of a mine's potential Scope 3 emissions overseas, be
275 contrary to the international convention as recognised in the Kyoto protocol
276 that each nation is responsible only for the emissions that occur directly
277 within its jurisdiction
- 278 • Likely give rise to carbon leakage by encouraging thwarted investments to
279 occur overseas

⁹ Cole Latimer, "The end of Australian thermal coal? Not likely". *Australian Mining*, 17 September 2014.
<http://www.miningaustralia.com.au/features/the-end-of-australian-thermal-coal-not-likely-opin>

¹⁰ Land Court of Queensland, *Hancock Coal Pty Ltd v Kelly & Ors*, *op. cit.*, page 100.

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- 280 • For this reason, have no impact on reducing GHG emissions globally.
- 281 In summary, banning individual coal mines on a case by case basis will not
- 282 provide:
- 283 • an *efficient* solution, because in the absence of a market mechanism we
- 284 cannot be sure that it would provide a least cost outcome, nor
- 285 • an *effective* solution, because it would not reduce global GHG emissions
- 286 since almost certainly the emissions would merely occur somewhere
- 287 else.

288 **Future global market for thermal coal**

289 A major area of contention between experts is the future outlook for global coal

290 demand, particularly thermal coal. This could affect the long term viability of major

291 new coal projects such as the proposed Carmichael mine and other possible

292 investments in the Galilee Basin.

293 There are a number of issues that will affect the future of coal, particularly in

294 terms of its use in electricity generation. These include:

- 295 • Whether the nations of the world reach agreement on the need to take
- 296 substantial action to address climate change and in particular whether
- 297 they implement measures that have the potential to limit global warming
- 298 to two degrees Celsius
- 299 • Concern about the air pollution caused by the combustion of coal in
- 300 power generation plant
- 301 • The pace of technological change that has the potential to improve the
- 302 commercial viability of low emissions alternatives to coal, such as solar
- 303 power with storage and small nuclear reactors (SMRs)
- 304 • On the positive side for the industry, the possibility that carbon capture
- 305 and storage (CCS) of carbon emissions from coal-fired generators will
- 306 become commercially viable.

307 These are very significant "known unknowns". They are likely to be supplemented

308 by some "unknown unknowns". This makes it extremely difficult to predict the

309 future of coal in the world economy and there are many views on this issue. For

310 example, agencies that are funded by the coal industry often take quite an

311 optimistic view on the future of coal, while agencies that argue for vigorous action

312 on climate change may promote the view that coal is a moribund fossil fuel. In

313 order to derive the most reliable estimates of the future market for coal it seems

314 to me necessary to seek unbiased estimates from well-regarded and well-

315 resourced independent agencies.

316 In my evidence, I rely on official sources, both internationally and domestically.

317 The agencies concerned respectively are the International Energy Agency (IEA),

318 based in Paris, and the Commonwealth government's Bureau of Resources and

319 Energy Economics (BREE), based in Canberra. Both agencies have produced

320 recent estimates of the future outlook for coal. In my opinion, the IEA produces

321 the best available unbiased, independent estimates of the future of energy
322 industries worldwide. BREE is a well-resourced government agency focussing on
323 the Australian minerals and energy sector that is also clearly independent and
324 unbiased.

325 In the joint expert report by Tim Buckley and myself, Mr Buckley considers
326 that thermal coal demand will peak in 2016 and that thereafter there will be
327 a structural decline in demand.¹¹ This projection contrasts strongly with the
328 estimates produced by the IEA and BREE which see coal demand
329 continuing to grow, albeit more slowly than in the recent past. The IEA's
330 forecast, published in November 2014, suggested that "Global coal
331 demand grows by 15% to 2040, but almost two-thirds of the increase
332 occurs over the next ten years."¹²

333 **4.2 Given that China's policy position, as part of an agreement**
334 **brokered with the United States, is to bring forward its projected**
335 **peak greenhouse gas emissions to around 2030 (and then reduce**
336 **emissions levels), how likely is it that China will manage to exceed**
337 **this goal, including before the end of 2016?**

338 The accord between the US and Chinese Presidents on climate change,
339 announced on 11 November 2014, was an important step towards reaching a
340 global agreement on future emissions reductions at the conference to be held in
341 Paris in December 2015. After noting that the US pledge of emissions reductions
342 was greater than had previously been announced, the *New York Times* went on
343 to state that:

344 "China's pledge to reach peak carbon emissions by 2030, if not sooner, is even
345 more remarkable. To reach that goal, Mr. Xi pledged that so-called clean energy
346 sources, like solar power and windmills, would account for 20 percent of China's
347 total energy production by 2030."¹³

348 This agreement, which had been negotiated over nine months, was announced
349 too late to influence the IEA's global energy outlook report, also published in
350 November 2014. Nevertheless, the findings of that report were consistent with
351 China's commitment:

352 "While coal is abundant and its supply secure, its future use is constrained by
353 measures to tackle pollution and reduce CO₂ emissions. Global coal demand
354 grows by 15% to 2040, but almost two-thirds of the increase occurs over the next

¹¹ Land Court of Queensland, *Adani Mining Pty Ltd v Land Services of Coast & Country Inc. & Anor.*, Joint Experts Report, Tim Buckley and Jon Stanford, December 2014, page 2.

¹² International Energy Agency (2014,1), *World Energy Outlook, 2014*, Paris, November, http://www.iea.org/publications/freepublications/publication/WEO_2014_ES_English_WEB.pdf, page 3

¹³ Mark Landler, "U.S. and China Reach Climate Accord After Months of Talks", *New York Times*, 11 November 2014, http://www.nytimes.com/2014/11/12/world/asia/china-us-xi-obama-apec.html?_r=0

355 ten years. Chinese coal demand plateaus at just over 50% of global consumption,
356 before falling back after 2030.¹⁴

357 The IEA's *Medium-Term Coal Market Report 2014*, launched in December 2014,
358 had the opportunity to include the China/US accord in its projections. The report
359 examines the short term outlook, to 2019. In her presentation launching the
360 report, the IEA's Maria van der Hoeven suggested that "the million-dollar question
361 is when coal demand will peak in China". She went on to say:

362 "We believe that the Chinese government is making serious efforts to improve air
363 quality in the cities and to diversify from coal. Developments in PV, hydro, wind
364 and nuclear have been staggering. However, under normal macroeconomic
365 conditions, we do not expect coal demand to peak in China during the outlook
366 period [ie, to 2019]. Despite this, it is important to emphasise that coal demand
367 has entered a new phase, where growth is moderate. Our projections of 2.5%
368 growth on average per year do not compare with 8.5% on average since 2000 –
369 or 9.2% from 2000 to 2010. Actually, last year we forecast 2.6% per year on
370 average to 2018, so this slowdown is not new. But even at a moderate pace, we
371 need to consider that in a large growing economy like China, the scale is different
372 from elsewhere. For example, electricity generation in 2013 grew 340 TWh
373 compared with 2012. This number is higher than electricity generated in countries
374 like Italy or Spain. In accordance with our projections, the growth during the
375 outlook period, 471 Mtce, will be larger than current European consumption."¹⁵

376 The IEA's report itself acknowledges that "lower economic growth and also a
377 lower energy intensive economy and higher diversification will curtail coal growth
378 in China in the coming years". But the report also states that "China will be the
379 coal giant for many years in the future. We project that coal demand annually
380 grows at 2.6%, more than 100 Mt per year during our outlook period [ie to 2019].
381 China will add more coal demand than any other country ..."¹⁶

382 Despite a significant effort to reduce energy intensity in China and the
383 dependence on fossil fuels, coal is still of fundamental importance to economic
384 development. To flesh out the above comment from the IEA, one example is the
385 development programme for Xinjiang province, in the west of China, which has a
386 US\$68 billion coal, oil and gas development plan. According to Huang Shouhong,
387 an analyst with Essence Securities, "Xinjiang will become a key new energy and
388 coal power producer to meet the demand from central and eastern part of China.
389 It will bring huge demand for extra-high voltage power grid construction to
390 transmit the electricity generated in Xinjiang to other parts of the country."¹⁷

391 In my view, and on the basis of this evidence, it seems that coal demand in China
392 will reach its peak not before the mid- to late- 2020s. This would be consistent

¹⁴ International Energy Agency (2014,1), *op. cit.*, page 3.

¹⁵ Maria van der Hoeven, "Launch of the Medium-Term Coal Market Report", International Energy Agency, Paris, 15 December 2015.
http://www.iea.org/newsroomandevents/speeches/141215_MTCMR2014_Speech.pdf

¹⁶ International Energy Agency (2014,2), *Medium Term Coal Market Report, 2014, Paris, December*.
<http://www.iea.org/Textbase/npsum/MTCMR2014SUM.pdf>, page 13.

¹⁷ China Daily, http://usa.chinadaily.com.cn/epaper/2015-01/23/content_19387662.htm

393 with President Xi's commitment in the accord reached with President Obama in
394 November 2014.

395 **4.3 On page 3 of the joint report, Mr Buckley 'sees the Indian**
396 **government as pursuing an electricity sector reform program', and**
397 **notes that his 'analysis shows the IEA has not yet incorporated this**
398 **electricity sector transformation into their view'. What is your**
399 **opinion on these statements?**

400 In the joint report, Mr Buckley states that:

401 "the Indian government is already well aware that air and water pollution in India
402 already exceeds that evident in the major Chinese cities on the Eastern
403 seaboard. As a result, the Indian Prime Minister and Energy Minister are highly
404 unlikely to continue to pursue a long term energy policy that locks India into a
405 sustained path of dramatically higher air and water pollution. The alternative the
406 Indian government is now proposing is to accelerate measures they have outlined
407 to diversify the Indian electricity sector rapidly away from coal by a dramatic
408 improvement in electricity grid efficiency and improved domestic coal rail freight
409 transportation capacity, plus a rapid expansion of electricity generation capacity
410 across hydro, wind, solar, gas and nuclear, plus the development of off grid solar
411 with storage based microgrids."¹⁸

412 I agree that the IEA probably has not incorporated "this electricity sector
413 transformation into their view". This is because, as far as I understand it, it has
414 not been incorporated in any official government policy. The reference that Mr
415 Buckley provides in support of his contention that an "electricity sector
416 transformation" is underway is a video of a conference held in November 2014 in
417 which the panel members are India's Energy Minister and three potential
418 commercial investors in renewable energy in India. While supporting increased
419 capacity in renewables, gas and nuclear energy in principle, the Energy Minister
420 nevertheless emphasises the importance of coal in what he sees as a potential
421 doubling of electricity supply in India over the next three or four years. The other
422 three conference participants suggest that the cost of capital is a major
423 impediment to commercial investment in renewables in India.

424 I do not believe that Mr Buckley's view represents a realistic vision or analysis of
425 the current position in India's electricity sector. At this stage, there appears to be
426 no concrete program to promote substantial decarbonisation of India's current or
427 future electricity supply.

428 **4.4 In relation to the comments expressed by Mr Buckley in the final**
429 **bullet point on page 4 of the joint report and your responses, do you**
430 **consider the IEA to be a body which takes a balanced approach to**
431 **its work?**

¹⁸ <http://webcasts.weforum.org/widget/1/india2014?p=1&a=59810>

432 According to its website, the "IEA is an autonomous organisation which works to
433 ensure reliable, affordable and clean energy for its 29 member countries and
434 beyond. The IEA's four main areas of focus are: energy security, economic
435 development, environmental awareness, and engagement worldwide".¹⁹

436 The IEA has been in existence for over forty years and has a strong reputation for
437 producing well-researched, independent analysis. It also takes a strong position
438 on the need to respond more effectively to the threat of climate change, as
439 suggested by its reference to "clean energy" in the quotation from its website
440 above. Indeed, far from being biased in favour of coal, it seems clear from its
441 publications and the speeches given by its officials that the IEA supports the
442 development of low emissions power generation technologies including
443 renewables, nuclear power and fossil fuels with CCS. In one of its most recent
444 publications, *Energy, Climate Change and the Environment*, the IEA states that:

445 "Meeting the challenge of climate change is not only about channelling new
446 investments toward clean energy, but also addressing high-emissions assets that
447 are already in place. Long-lived infrastructure can create path dependence in
448 energy systems and the potential for lock-in. Staying on track to limit temperature
449 rise to below two degrees Celsius requires a transition away from these assets at
450 faster rates than natural infrastructure replacement would dictate (i.e. before the
451 end of their economic lifetimes). Current assets could be seen as "locked in", but
452 they can also be "unlocked" through policy intervention."²⁰

453 In short, the IEA's proposed approach is calling for either the more rapid phasing
454 out of coal-based power generation plant or reductions in emissions from that
455 sector. This does not seem to me to reflect a bias in favour of coal or fossil fuels.
456 Indeed, I have noted comments by other energy sector observers that the IEA is
457 overly sanguine about the prospects for renewable energy and carbon capture
458 and storage. In terms of bias supposedly arising because the IEA consults closely
459 with the coal industry, it should also be noted that the Agency consults with a very
460 wide representation across all energy industries.

461 Overall, commentators with a pro-environmental focus tend to suggest that the
462 IEA is biased in favour of coal, but supporters of fossil fuels suggest the Agency
463 favours renewables and other low emissions technologies. To me, this implies
464 that the IEA is a neutral organisation that gets the balance pretty much right.

465 **4.5 In the last paragraph on page 8 of the joint report, you note that if the**
466 **world takes serious action against climate change, coal is a**
467 **threatened industry in the longer term. Could you specify what you**
468 **mean by longer term?**

469 If the world takes serious action against climate change, such as in pursuit of the
470 currently aspirational goal of limiting global warming to two degrees Celsius, it is

¹⁹ <http://www.iea.org/aboutus/>

²⁰ International Energy Agency (2014,3), *Energy, Climate Change and Environment*, Paris, December,
<http://www.iea.org/Textbase/npsum/EECC2014sum.pdf>, page 3.

471 clear that global emissions of greenhouse gases will need to peak in the very
472 near future and certainly before 2020. Thereafter, emissions would then need to
473 be reduced at a significant rate. If such strong policy action were to occur, the
474 global coal industry would face a serious existential threat that would begin to be
475 felt in the very near future.

476 While the nature of future global action against climate change will become more
477 apparent at the Conference of the Parties (CoP) to the UNFCCC in Paris in
478 December 2015, at this stage this remains an unknown. Other unknowns that will
479 impact in a major way of the future of thermal coal include, as suggested above:

- 480 • Whether CCS becomes commercially viable
- 481 • The relative cost of gas (with a significantly lower carbon footprint than
482 coal) for power generation
- 483 • The rate of technological change in low emissions alternatives to coal,
484 such as solar power with storage and small nuclear reactors
- 485 • The emissions reduction burden accepted by developing countries (will
486 India, for example, continue to increase its use of coal for electricity
487 generation?)

488 Nobody can know how all of these issues will play out. This is the nature of the
489 risk that will be evaluated by every potential investor in developing new supplies
490 of coal. My view is based on the projections of the IEA, namely that coal demand
491 will continue to grow, albeit more slowly than in the past, out to 2030 and beyond.
492 I therefore reiterate my view that if the world takes significant action against
493 climate change the global coal industry is likely to face an existential threat. On
494 the balance of current probabilities, this is likely to occur from around the year
495 2030. If a strong agreement is reached at this year's CoP in Paris, however, the
496 threat may occur earlier than this.

497 **4.6 On pages 18 and 19 of the joint report, you discuss comments made**
498 **by the Indian Energy Minister and your opinion on their relevance to**
499 **the Indian coal and energy markets. Can you elaborate on these**
500 **views?**

501 In early November 2014, India's Minister for Power, Coal and New and
502 Renewable Energy, Piyush Goyal, announced that, in a bid to reduce the impact
503 of substantial coal imports on the nation's external account, the government had
504 asked Coal India to more than double its output to 1 billion tonnes by 2019. If this
505 were achieved, the Minister suggested that imports of thermal coal may cease
506 within three years.

507 This announcement was in the context of a recent significant increase in imports
508 of thermal coal together with a commitment by the Prime Minister that all Indians
509 would have access to round-the-clock power supplies by 2022.

510 In the light of this, it is not at all clear that India will be able to become self-
511 sufficient in thermal coal in the near future. While governments may make
512 aspirational statements of this nature, massive investment in the coal industry
513 would be required in a very short period of time. Projections of the import
514 requirement recently published by the Indian government suggest a shortfall of
515 185 - 265 million tonnes by 2016-17, vis-à-vis imports of 168 million tonnes in
516 2013-14.²¹ Some analysts do not appear to take this objective very seriously and
517 it is notable that only three weeks later the Minister issued a statement to the
518 effect that in the short term coal imports would have to increase. This increase in
519 coal imports has been required to address a shortage of stockpiles at power
520 stations.²²

521 In its medium term market outlook for coal published in mid-December 2014, the
522 IEA takes little account of the Minister's statement. The IEA suggests that, out to
523 2019, "annual coal consumption in India will grow 177 million tonnes of coal-
524 equivalent, or over 250 Mt, at 5% annual growth on average, becoming the
525 world's second-largest coal consumer". The IEA also identifies India's problems
526 in ramping up domestic coal production and predicts that "India will become the
527 second-largest coal consumer, surpassing the United States, ... and the world's
528 largest thermal coal importer."²³

529 A further issue is that the quality of India's coal is poor. A recent report suggests
530 that:

531 "The natural fuel value of Indian coal is poor. On average, the Indian power plants
532 using India's coal supply consume about 0.7 kg of coal to generate a kWh,
533 whereas United States thermal power plants consume about 0.45 kg of coal per
534 kWh. This is because of the difference in the quality of the coal, as measured by
535 the Gross Calorific Value (GCV). On average, Indian coal has a GCV of about
536 4500 Kcal/kg, whereas the quality elsewhere in the world is much better; for
537 example, in Australia, the GCV is 6500 Kcal/kg approximately."²⁴

538 The Minister's statement would also seem to be at odds with an agreement in
539 New Delhi in September 2014 under which Prime Ministers Modi (India) and
540 Abbott (Australia):

541 "agreed to deepen the cooperation between both countries on energy security
542 through a Ministerial-level dialogue. They agreed to develop a strategic
543 partnership on energy and resources based on long-term, sustainable and
544 reliable supply of Australian resources based on India's energy needs. They
545 agreed that cooperation on energy - extending to coal, LNG, renewables and

²¹ Krishnan Das, "Goyal: may stop thermal coal imports in 2-3 years," Reuters,
<http://in.reuters.com/article/2014/11/12/india-coal-imports-idINKCN0IW0FJ20141112>

²² <http://www.coalweek.com/news/markets-a-competition/23632-coal-shortages-on-indias-power-sector>

²³ International Energy Agency (2014,2), *Medium Term Coal Market Report, 2014, Paris, December*,
<http://www.iea.org/Textbase/npsum/MTCMR2014SUM.pdf>, page 13. .

²⁴ http://en.wikipedia.org/wiki/Electricity_sector_in_India

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uranium-and on resources such as iron ore, copper and gold were key elements of the relationship and committed to intensifying these links."²⁵

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More importantly in my view, it would be surprising if Adani were still pursuing the Carmichael project if it believed that India was going to become self-sufficient in coal. Adani Power is India's largest private electricity producer and Prime Minister Modi has committed to a major expansion of power supplies. Adani has built the largest coal import terminal in the world. It seems very unlikely that the Indian government would prohibit or seek to restrict Adani's imports of coal from Australia. Indeed, the Indian government has demonstrated support for Adani's Carmichael project. In Brisbane on 17 November 2014, Prime Minister Modi said "the Carmichael project would 'set a new standard for India-Australia co-operation", and Adani was given a US\$1 billion line of credit by the majority government-owned State Bank of India."²⁶

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5. Summary of Opinion and Findings

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My findings support the view that regulating the coal industry so as to restrict the development of new proposed mines would give rise to no benefit and, indeed, a considerable cost to the Australian and Queensland communities.

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In most countries, the combustion of coal still provides the cheapest and most efficient means of generating large scale supplies of electricity. Around the world, there is a strong correlation between energy consumption and living standards and access to affordable energy lies at the heart of the rapid emergence from poverty of people in developing economies, particularly in China and India. An increase in energy costs could have a substantial deleterious effect on the ability of governments in developing countries to help their people emerge from poverty.

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Yet the combustion of coal comes at a cost in the form of the emissions of greenhouse gases, which, according to the weight of scientific opinion, lead to high carbon concentrations in the atmosphere, global warming and ultimately to climate change. In the context of global efforts to address climate change by reducing GHG emissions, would it be in the public interest to prohibit the development of more coal mines in Queensland on a case by case basis, so as to avoid the GHGs emitted first by the mining operations and then by the combustion by a third party of the coal produced?

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My opinion on this question is clear. While such an approach may be superficially attractive from the perspective of addressing climate change, it would not represent an efficient or effective policy approach in pursuit of this objective. Not only would it be contrary to the Australian government's policy framework to take

²⁵ Australian Government media release, <https://www.pm.gov.au/media/2014-09-05/joint-statement-prime-minister-modi-new-delhi-india>

²⁶ Paddy Manning, *Crikey*, 18 November 2014, <http://www.crikey.com.au/2014/11/18/modi-talks-up-adanis-galilee-project-but-even-generous-subsidies-might-not-be-enough/>

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such action, but it would also not be in the public interest to do so. There are several reasons for this:

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- Under the UNFCCC, Scope 3 emissions that occur as a result of combusting coal exported from Australia in another country become the reporting responsibility of the country concerned. In the context of any global agreement to address climate change, containing such emissions would also be the responsibility of the country in which the combustion of coal and consequent GHG emissions occur.

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- In addressing climate change, Australian governments seek to avoid carbon leakage – there is no benefit to Australians when investment is driven offshore since it leads to a loss of economic activity and jobs in Australia with no offsetting benefit in terms of climate change. The emissions that would have occurred in Australia are merely transferred overseas. Carbon leakage would be the clear effect of prohibiting new investment in coal mines in Queensland

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- As well as being inefficient, the proposed approach of seeking to ban new coal mines on a case by case basis would not be an effective approach to reducing GHG emissions. This is because there are substantial reserves of coal around the world and many other countries seeking to increase their exports. In my opinion, a decision to ban a proposed mine in Australia would lead to the demand for coal to be satisfied elsewhere.

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Overall, an unfavourable recommendation of the proposed Carmichael coal mine as called for in the Objections cannot be justified. If implemented, it would have a negative impact on living standards in Queensland and Australia more generally. There would be no offsetting benefit in terms of reducing global GHG emissions; indeed, these may even be higher as a result of such a policy approach.

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In terms of the likely commercial viability of the proposed mine in the light of uncertainties regarding the future global market for thermal coal, I am still strongly of the view that this is a risk to be assessed by the project proponent before committing to making the investment in the Carmichael mine. In doing so, the proponent will, *inter alia*, weigh up the various projections of the future global market for thermal coal, which put forward a diversity of views. There are some major factors that will influence future demand for coal, including:

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- the level of ambition among the international community to tackle climate change
- the emissions reduction burden accepted by developing countries
- future technological change in further developing the low emissions alternatives to coal in electricity generation, and in CCS
- the availability of natural gas at a commercially viable price, particularly in developing countries.

622 These are all matters for individual judgement. My view is mainly informed by the
623 projections of coal demand produced by the International Energy Agency, the
624 most highly rated independent energy forecaster globally. This agency sees the
625 demand for coal increasing out to 2040, albeit at a slower rate than in the past. In
626 particular, demand from China and India will continue to grow. Despite the
627 comments of India's Energy Minister, it seems inevitable that India will continue to
628 import coal in significant quantities in the medium term. In the longer term, if the
629 world takes significant action on climate change and CCS does not become
630 commercially viable, the global coal industry faces an existential threat. When
631 that threat will become a reality is impossible to forecast with any confidence at
632 this stage. But ultimately, this is a commercial risk that will be assessed by all
633 potential investors in the coal industry

634 **6. Additional Information Required**

635 I am satisfied that I have had access to all the information I need to reach a
636 reliable conclusion.

637 **7. Expert's Statement**

638 I confirm the following:

- 639 (a) the factual matters stated in this report are, as far as I know, true;
- 640 (b) I have made all enquiries that I consider appropriate;
- 641 (c) the opinions stated in this report are genuinely held by me;
- 642 (d) the report contains reference to all matters I consider significant,
- 643 (e) I am independent in my views and have never been employed by or
644 worked for Adani, and
- 645 (f) I understand my duty to the court and have complied with that duty

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650 Jonathan Geoffrey Stanford
651 Director, Insight Economics Pty Ltd
652 6 February 2015

Jon Stanford

Curriculum vitae

Director

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Expertise

Since taking up a career as a consultant in the mid-1990s, Jon Stanford has developed a strong practice in economics and policy issues related to climate change, energy, the resources sector, industry development and defence. In this period, Jon was a Director of the Allen Consulting Group for over ten years before leaving to establish a new firm, Insight Economics, with four other consultants. From 2006-09 Jon was a Partner with Deloitte and helped to establish their new economics practice. With three colleagues, he has now re-formed Insight Economics as a small, specialist consultancy focussing on public policy and corporate strategy.

Before becoming a consultant, Jon Stanford had a significant career with the Australian Public Service working in areas that involved economics and public policy. His final position was as head of the Industry, Resources and Environment Division in the Prime Minister's Department.

Jon has regularly contributed articles to the op ed pages of the *Australian Financial Review*.

Consulting career

Climate change

While in government, Jon was Chair of the Australian Government's inter-departmental committee on greenhouse and Chair of the Inter-governmental Committee on Ecologically Sustainable Development. Since then, he has developed a strong practice in the economics and public policy aspects of climate change. He has analysed the appropriate public policy responses and modelled the economic impact of possible policies for a number of clients, including the Commonwealth and State governments and industry groups. A major report on emissions trading, undertaken ten years ago for the Victorian Government, was the first attempt in Australia to model the economic impact of measures to address climate change.

Recent climate change projects include:

- Several projects for the Global Carbon Capture and Storage Institute, including drafting a paper to be presented by Lord Stern, a member of the Institute's International Advisory Board (2010-11).
- Major assignment for the Northern Territory Government assisting in developing a climate change strategy for the Territory and advising the Chief Minister on climate change policy (2008-09).
- Assessments for two jurisdictions on the complementarity of existing climate change programs with the Rudd government's proposed Carbon Pollution Reduction Scheme (2008-09).
- Project for a State government to assess proposed carbon emissions limits for a major resources project (2009).
- A major report for the Victorian Government, *The Greenhouse Challenge for Energy* (2005)
- Undertook the research and modelling underpinning a report by the Australian Business Roundtable on deep cuts to greenhouse gas emissions (2006).
- Significant work for the National Emissions Trading Taskforce (NETT) in 2006.

Jon Stanford has acted as an expert witness on several cases involving proposals to commission new major coal mining projects. These include the following projects:

- Xstrata's Wollombi proposal (2007)
- Xstrata's Wandoan proposal (2011)
- Hancock Coal's Alpha Mine proposal (2013)
- Adani's Carmichael Mine proposal (2015).

Over the last few years, Jon has contributed a number of articles on climate change policy to the opinion pages of *The Australian Financial Review*. He has also regularly addressed conferences on the issue.

Energy and resources

Following on from his responsibilities in energy and competition policy in the Department of the Prime Minister and Cabinet, in the late-1990s, Jon was Chair of the Council for Australian Governments' Gas Reform Implementation Group, which developed and implemented the National Gas Code. This group included all nine Australian governments, the gas industry, gas users, the ACCC and the National Competition Council. While there were different views, the Group was highly successful in that the details of the National Gas Code were finalised in a relatively short period of time and the Code has not been significantly revised subsequently.

More recently Jon has directed a number of energy related projects including:

- Study of future options for base load power for a State government.
- A review of the options for base load electricity generation in Australia with a carbon constraint (2010).
- Assisting a State/Territory Government develop a renewable energy strategy (2009).
- A major report for the Australian Uranium Association on prospects for the uranium industry in the light of the international climate change response.
- A report for the Commonwealth Government on regulatory impediments to the further development of the uranium industry (2007).

Economic modelling: impact of major projects

Working with the Centre of Policy Studies at Monash University, Jon has undertaken a number of economic modelling projects to estimate the economic impact of major investment projects. These include

- A project for Gunns Ltd on a proposed pulp mill at Bell Bay
- Significant work for Woodside on several LNG projects.
- A project for BHP Billiton to estimate the economic impact of the proposed Olympic Dam expansion.
- A major project for the Western Australian Government to examine the economic, social and strategic aspects of the Gorgon JV's proposal to build a LNG processing plant on Barrow Island.
- A project for Rio Tinto estimating the economic impact of the HIsmelt project
- A recent project for Qenos Ltd estimating the impact of a proposed new investment project.

Industry development

Much of Jon's public service career was concerned with industry development policy. In recent years, as a consultant, he has directed:

- A very substantial project for the automotive companies in the Philippines to examine the potential for the industry to participate in regional global supply chains and to design a policy framework to sustain the industry in the future.
- A project for a major Australian player in the motor vehicle industry on future business strategies.
- An assignment for Hawker de Havilland in relation to its involvement in the Boeing 787 project.

Defence

Jon has had a long interest in defence issues. In recent years he has directed several projects related to defence, including:

- Assisting the Defence Materiel Organisation to draft the Strategic Sector Plan for the defence aerospace industry.
- A project for the Victorian Government on building the Air Warfare Destroyers.
- An assignment for an Australian defence company on participation in the F-35 (Joint Strike Fighter) project.
- A project on defence shipbuilding policy.
- A project for the Victorian Government on defence industry policy.
- An assignment for the governments of Victoria, Queensland and Western Australia on building the Landing Ships, Helicopter Dock.

Program reviews

Jon Stanford has also undertaken some important program reviews, including evaluations of:

- Government regulation of the uranium industry
- The Greenhouse Challenge program
- Programs to support the export of education services
- The Overseas Projects Corporation of Victoria Ltd.

Public Service career

Before becoming a consultant, Jon Stanford had a significant career with the Australian Public Service in Canberra.

Jon's final position with government was as head of the Industries, Resources and Environment Division in the Department of the Prime Minister and Cabinet. In that position he was responsible for

coordinating competition policy across the Commonwealth Government and in the CoAG process. He was also, *inter alia*, Chair of the CoAG working groups on gas reform and water reform and Chair of the Inter-governmental Committee on Ecologically Sustainable Development. Within the Commonwealth Government, he chaired the standing inter-departmental committee on Greenhouse. The position also involved briefing the Prime Minister on energy, resources and manufacturing industry issues, as well as communications policy. Jon was Chair of the major crisis response group. He played a significant role in drafting various economic statements, including *Working Nation*.

Before his period in PM&C and after an early career in the forbears to the Productivity Commission, in the early 1990s, Jon worked in the industry portfolio. He was Director of the Bureau of Industry Economics, a relatively independent government agency that undertook policy-oriented research for the then Minister, Senator John Button. He then became head of the Policy Division.

Professional and academic qualifications

Jon was born in England and studied Economics at the University of Manchester before migrating to Australia. In the 1980s, he won a Public Service scholarship to undertake a two year MBA program at London Business School. In the early '90s, Jon spent a year in London as the Public Service Fellow at the Sir Robert Menzies Centre for Australian Studies at the University of London. In that position, he edited a book on industry policy, launched by Senator Button.

Jon Stanford's academic qualifications are as follows:

1. MBA, London Business School
2. Master's degree in Economics, University of Manchester
3. BA (Economics), 2A Honours, University of Manchester

Annexure B

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Writer Claire Meiklejohn
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Our reference CEM:PWS:159359-00022



6 February 2015

Mr J Stanford
Director
Insight Economics

Email jon.stanford@insighteconomics.com.au

Dear Jon

**Adani Mining Pty Ltd v Land Services of Coast & Country Inc. & Anor
Land Court of Queensland Proceedings no. MRA428-14, EPA429-14, MRA430-14,
EPA431-14, MRA432-14 and EPA433-01**

We refer to:

- 1 Mining Lease Applications (**MLAs**) 70441, 70505 and 70506 made by Adani Mining Pty Ltd (**Adani**);
- 2 the associated environmental authority application, as re-made on 14 April 2014;
- 3 the Environmental Impact Statement (**EIS**), Supplementary EIS (**SEIS**) and Additional Information to the EIS (**AEIS**) prepared for Adani and made publicly available under the *State Development and Public Works Organisation Act 1971* (Qld);
- 4 the draft Environmental Authority (**EA**) issued by the Statutory Party on 28 August 2011;
- 5 the Objection of Land Services of Coast and Country Inc (**LSCCI**) to the MLAs dated 16 June 2014;
- 6 the Objection of LSCCI to the EA made 10 September 2014;
- 7 the submission (dated 17 June 2014) and objection (dated 25 September 2014) about the EA made by Debi Goenka of the Conservation Action Trust (**CAT**);
- 8 the Preliminary List of Issues for the LSCCI dated 2 December 2014;
- 9 your joint report, with Mr T Buckley, dated 30 December 2014; and.
- 10 our letter of instruction to you dated 29 January 2015.

Instructions

- 11 We require you to provide a further statement of evidence under the *Land Court Rules 2000* (Qld) (**Rules**).

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- 12 In accordance with orders made by the Court, your further statement of evidence is required by **Friday, 6 February 2015**.

Format of report

- 13 When preparing the further statement of evidence, and responding to the questions dealt with in section E below, please deal with the following:

SECTION A - Qualifications and Curriculum Vitae

- 14 Please attach your curriculum vitae to the report.

SECTION B - Material relied on in preparing the statement

- 15 Lists are sufficient for the statement, however, it would be useful to ensure that you (and we) have a copy of all the listed material when finalising your report. In particular, you should list:

- (a) all material facts, written or oral, on which the statement of evidence is based; and
- (b) reference to any literature or other material relied on by you to prepare the statement.

- 16 It may also be necessary to review your joint expert report to ensure your lists include sources which may not be specifically identified in that report. For example, in the first bullet point on page 4 of the joint report you refer to the business plan of Adani (India). If your understanding of this business plan is drawn from, say, an Adani Group website or from media coverage, a reference should be included. Similarly, a number of references to the IEA and its broader activities are not specifically identified, and should be identified (e.g. on page 5).

- 17 You do not need to list material you have **not** relied on.

- 18 Any inspection, examination or experiment conducted, initiated or relied on by you to prepare the statement must also be described.

SECTION C – Background to Report

- 19 Please set out the extent of your previous involvement in the Mine. Specifically, we would like you to:

- (a) indicate whether you were involved in the preparation of any material in support of the proposed Mine and, if so, provide details of that work;
- (b) confirm that you have since been engaged by McCullough Robertson, on behalf of Adani, to provide an expert report in the Land Court proceedings;
- (c) confirm that you have read this letter of instruction (and attach a copy of this letter of instruction to your report), and confirm that you understand your duties to the Land Court as an expert witness;
- (d) confirm that, notwithstanding your previous relationship with the Mine (if any), you consider you are able to provide an informed, independent opinion about the matters contained within your Report.

SECTION D – Opinion on objections

- 20 Please review the objections and respond to any issues within your field of expertise which concern the MLAs and EAs.

- 21 In considering which matters and issues in the objections (and raised by Mr Buckley in the joint report) are within your field of expertise, we advise that certain matters addressed by Mr Buckley in the joint report may be addressed by other evidence. You should not respond to matters raised by Mr Buckley which are outside your field of expertise (except to state that you will not be responding, unless you have already indicated this in the joint report).
- 22 In particular, we draw your attention to the grounds in paragraphs 1, 2, 5 and 8 of the MLAs objections, and paragraphs 2 to 4, 7 and 9 of the EA application objection. All of the grounds of each objection are set out below for convenience.

MLAs objection

The application for the mining leases under the Mineral Resources Act 1989 (Qld) (MRA) for the Carmichael Coal Mine (the mine) should be refused on the basis of the considerations stated in section 269(4)(c), (f), (l), (j), (k), (l) and (m) of the MRA:

- 1. If the mine proceeds, there will be severe and permanent adverse impacts caused by the operations carried out under the authority of the proposed mining leases.*
- 2. If the mine proceeds, the public right and interest will be prejudiced.*
- 3. Good reason has been shown for a refusal to grant the mining leases due to the risk of severe environmental impacts and the lack of scientific certainty regarding those impacts.*
- 4. Taking into consideration the current and prospective uses of the land, the proposed mining operation is not an appropriate land use.*
- 5. There is an unacceptable risk that will [sic] there will not be an acceptable level of development and utilisation of the mineral resources within the area applied for because the mine, if it proceeds at all, is likely to cease to be economically viable within the term of the lease, resulting in some or all of the environmental impacts without realising the full economic benefits predicted.*
- 6. The Applicant does not have the necessary financial capabilities to carry on mining operations under the proposed mining leases.*
- 7. If the mine proceeds, the operations to be carried on under the authority of the proposed mining leases will not conform with sound land use management.*
- 8. In the alternative to grounds 1-7 above, if the applications are not refused, conditions should be imposed to address the matters raised in grounds 1-7.*

EA application objection

The application for the environmental authority for the Carmichael Coal Mine (the mine) should be refused under the Environmental Protection Act 1994 (Qld) (EPA) on the basis of the considerations stated in ss 3, 5, 171 and 191 of the EPA and other relevant considerations having regard to the subject-matter, scope and purpose of the EPA:

- 1. Approval of the mine is contrary to the object of the EPA stated in s 3 because approval and construction of the mine will not protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).*

2. *Approval of the mine would be contrary to the requirement in s 5 of the EPA for the administering authority and the Land Court to perform a function or exercise its power under the Act in a way that best achieves the object of the Act.*
3. *Approval and construction of the mine would be contrary to the precautionary principle, which is a principle of environmental policy as set out in the Intergovernmental Agreement on the Environment and, therefore, part of the standard criteria for the decision.*
4. *Approval and construction of the mine would be contrary to intergenerational equity, which is a principle of environmental policy as set out in the Intergovernmental Agreement on the Environment and, therefore, part of the standard criteria for the decision.*
5. *Approval and construction of the mine would be contrary to the conservation of biological diversity and ecological integrity, which is a principle of environmental policy as set out in the Intergovernmental Agreement on the Environment and, therefore, part of the standard criteria for the decision.*
6. *Approval and construction of the mine will cause environmental harm to the character, resilience and value of the receiving environment.*
7. *Approval and construction of the mine would be contrary to the public interest.*
8. *Approval and construction of the mine will cause material and serious environmental harm.*
9. *In the alternative to grounds 1-8 above, if the application is not refused, conditions should be imposed to address the matters raised in grounds 1-8 above.*

- 23 We also ask you to consider those 'Facts and Circumstances' relied on in support of each objection that are relevant to your field of expertise, namely:
- (a) paragraphs 25 to 34 of the Facts and Circumstances in the MLAs objection; and
 - (b) paragraphs 25 to 29 of the Facts and Circumstances in the EA objection.
- 24 Your further statement of evidence should also refer to, and expand upon, matters of disagreement in your joint expert report which require further explanation. Please note that, pursuant to the Rules, your further statement may not:
- (a) contradict, depart from or qualify an opinion in relation to an issue the subject of agreement in the joint report; or
 - (b) raise a new matter not already mentioned in the joint report.
- 25 In discussing those areas of disagreement noted in the joint report, as they primarily obtain to the objector's notified issues, we ask that you expand on and relate your opinion back to any relevant Facts and Circumstances and Grounds of the objections.
- 26 For example:
- (a) where the joint report notes areas of disagreement as to the relevance of particular matters raised by your counterpart, your further discussion may be relevant to or touch upon:
 - (i) those Facts and Circumstances which allege that the Mine will have adverse economic impacts and potentially severe adverse economic impacts on local, regional, State and global economies;

- (ii) ground 5 of the MLAs objection; and
 - (iii) the primary ground of the objections, that the Mine should be refused.
- 27 Please state your opinion in response to the assertion in the LSCCI's objections that '*it has not been adequately demonstrated that the mine will not increase the likelihood, severity and longevity of the environmental harms that will result from climate change*'.
- 28 Please address the CAT submission and objection to the extent they are relevant to your field of expertise.
- 29 We also ask that you also address the following specific questions (either separately, or as part of the responses to the issues in the objections):
- (a) Given that China's policy position, as part of an agreement brokered with the United States, is to bring forward its projected peak greenhouse gas emissions to around 2030 (and then reduce emissions levels), how likely is it that China will manage to exceed this goal, including before the end of 2016?
 - (b) On page 3 of the joint report, Mr Buckley 'sees the Indian government as pursuing an electricity sector reform program', and notes that his 'analysis shows the IEA has not yet incorporated this electricity sector transformation into their view'. What is your opinion on these statements? Do you know on what Mr Buckley's 'vision' and 'analysis' are based?
 - (c) In relation to the comments expressed by Mr Buckley in the final bullet point on page 4 of the joint report and your responses, do you consider the IEA to be a body which takes a balanced approach to its work?
 - (d) In the last paragraph on page 8 of the joint report, you note that if the world takes serious action against climate change, coal is a threatened industry in the longer term. Could you specify what you mean by longer term?
 - (e) On pages 18 and 19 of the joint report, you discuss comments made by the Indian Energy Minister and your opinion on their relevance to the Indian coal and energy markets. Can you elaborate on these views?
- 30 We also note a number of statements in your joint report indicating your opinion that proving up of the financial viability of a project is not required in order to gain approvals. In this regard, we would draw your attention to the **attached** judgments being *Armstrong & Anor v Brown & Anor* [2004] QCA 80 at paragraphs 14-16 and *Re Salmon v Armstrong & Armstrong* [2001] QLRT 72 at paragraphs 7 – 15, which relate to considerations of financial viability as a consideration for the grant of MLAs.
- 31 The authorities include judicial observations that the court may take notice that proponents and developers generally only expend substantial sums of money with a view to making a profit.
- 32 Please have regard to these observations in respect to your opinions detailed in the joint report and your further report.
- 33 In your further statement of evidence, the Rules also require that where:
- (a) there is a range of opinion on matters dealt with, a summary of the range of opinion and the reasons why you have adopted a particular opinion be provided; and
 - (b) access to any **readily ascertainable** additional facts would assist you in reaching a more reliable conclusion, a statement to that effect be included.

- 34 We request that you specifically identify, in your further report, those areas of disagreement in the joint report where your counterpart has made assertions for which you have not been provided a factual basis or material to rely upon (e.g. the second paragraph on page 14 of the joint report). For each such assertion, please make your own enquiries (or seek further instructions from us) to ascertain whether a factual basis or material is available and, if it is not, please further identify this in your individual report.
- 35 In dealing with the points of disagreement in your joint report, and responding to the relevant Facts and Circumstances and grounds of the objections, please also specifically identify any relevant conditions of the draft EA and express your opinion as to the appropriateness of the draft condition or its relevance to the grounds of the objections.

SECTION E – Summary of conclusions

- 36 The Rules require your further statement to provide a summary of the conclusions you have reached. In our view, this is often best presented in a separate, concluding section (or at the start of the statement).

SECTION F – Expert’s confirmation

- 37 It is important that the report you prepare be an independent report prepared bearing in mind an expert witness’ overriding duty to the court. The overriding duty encompasses the following points:
- (a) You have an overriding duty to assist the Court on matters relevant to your area of expertise;
 - (b) You are not an advocate for a party, even when giving testimony that is necessarily evaluative rather than inferential; and
 - (c) Your paramount duty is to the Court and not to the person retaining you.
- 38 An example of the type of thing that might be said in this section is as follows:
- (a) *I have read and understood relevant extracts of the Land Court Rules 2010 (Qld) and the Uniform Civil Procedure Rules 1999 (Qld). I acknowledge that I have an overriding duty to assist the Court and state that I have discharged that duty.*
 - (b) *I have provided within my report:*
 - (i) *details of my relevant qualifications;*
 - (ii) *details of material that I relied on in arriving at my opinions; and*
 - (iii) *other things as required by the Land Court Rules.*
 - (c) *I confirm that:*
 - (i) *the factual matters included in the statement are, to the best of my knowledge, true;*
 - (ii) *I have made all enquiries I consider appropriate for the purpose of preparing this statement;*
 - (iii) *the opinions included in this statement are genuinely held by me;*
 - (iv) *this statement contains reference to all matters I consider significant for its purpose;*

- (v) *I have not received or accepted any instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.*
- (d) *If I become aware of any error or any data which impact significantly upon the accuracy of my report, or the evidence that I give, prior to the legal dispute being finally resolved, I shall use my best endeavours to notify those who commissioned my report or called me to give evidence.*
- (e) *I shall use my best endeavours in giving evidence to ensure that my opinions and the data upon which they are based are not misunderstood or misinterpreted by the Land Court.*
- (f) *I have not entered into any arrangement which makes the fees to which I am entitled dependent upon the views I express or the outcome of the case in which my report is used or in which I give evidence.*

Confidentiality

39 Any report generated by you should remain in draft until such time as we are in a position to discuss the contents of the report with you. We ask that the report be kept strictly confidential as it is to be used for the purpose of obtaining legal advice or for use in legal proceedings. You are not authorised to provide these instructions or your report to any other person or party.

If you would like any further material, or have any questions, please contact us.

Yours sincerely



Peter Stokes
Partner