

**TOWARDS A LEGAL MODEL FOR DECENTRALISED RENEWABLE  
ENERGY PLANNING AND DETERMINATION**

**AS APPROVED BY POSTGRADUATE STUDIES COMMITTEE**

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## Abstract

South Africa has collectively with the global community made net zero pledges through a number of treaties<sup>1</sup> and as such, it is important that the country sheds itself from any legal and implementation bottlenecks that make the uptake of renewable energy difficult. The aim of this research is to provide a perspective on how, from a legal standpoint, having decentralised themes of regulation in respect of the planning and determination of renewable energy will accelerate the uptake of renewable energy production by the private sector, and increase new generation capacity needed to ameliorate the energy crisis in South Africa. Through a qualitative analysis of energy related legislation including secondary and tertiary sources of law, the research found that having the Department of Energy and Mineral Resources (DMRE) be responsible for the drafting and updating of the Integrated Resource Plan (IRP)<sup>2</sup> and being its custodian, has allowed the technology energy mix of South Africa to be a highly politicised process, and has thus derailed the uptake of renewable energy. The research finds that having the DMRE as the entity that solely undertakes the section 34 determinations<sup>3</sup> is a flawed process to introducing new generation capacity that South Africa requires. The paper posits that the formulation of the IRP needs to be an open process that allows energy stakeholders such as industry, academia and communities participate and not merely provide comments as outsiders. As such, the paper concludes that regulation of renewable energy in South Africa needs to be decentralised to be efficient.

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<sup>1</sup> Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016), Kyoto Protocol to the UNFCCC (adopted on 11 December 1997, entered into force 16 February 2005) and UNFCCC (adopted 12 June 1992, entered into force 21 March 1994) A/RES/48/189.

<sup>2</sup> GN.1360 of 18 October 2019: Integrated Resources Plan 2019.

<sup>3</sup> Section 34 of the Electricity Regulation Act 4 of 2006.

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## 1. Introduction

There is largely consensus around the world and the scientific community that emissions of greenhouse gases (GHGs) have caused global warming largely as a result of the Anthropocene.<sup>4</sup> The Anthropocene is a phenomenon where the activities of human beings cause a change of the planet on a geological scale.<sup>5</sup> It is trite that GHGs have shaped the world and driven human progress to what we know it today.<sup>6</sup> At the same time, GHGs have done their fair share of damage from prolonged unabated global GHGs emissions that have caused high sea level rises, resulting in the displacement of persons and unpredictable weather patterns that disproportionately affect poor people and countries.<sup>7</sup>

Collective action was needed for the global community to reach consensus on how the world would respond to climate change. Several treaties have been concluded in this regard and it was agreed that countries will seek a net zero future by the year 2050.<sup>8</sup> This means that countries have pledged to reduce or eliminate GHGs emissions by 2050 so to reduce the global temperature of the planet by 1.5 degree Celsius.<sup>9</sup> These global pledges mean that countries should increasingly use renewable sources to produce energy as these do not emit GHGs. Renewable energy is defined in the White Paper on Renewable Energy of the Republic of South Africa as energy harnessed from ‘naturally occurring non-depletable sources of energy, such as solar, wind, biomass, hydro, tidal, wave, ocean current and geothermal, to produce electricity, gaseous and liquid fuels, heat or a combination of these energy types’.<sup>10</sup> This paper focuses on renewable energy as a fuel to produce electricity because the emissions of carbon dioxide in South Africa

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<sup>4</sup> S Lewis & M Maslin ‘Defining the Anthropocene’ *Nature* 519 (2015) 171–180.

<sup>5</sup> Ibid.

<sup>6</sup> D McDonald ‘Electric Capitalism: Conceptualising Electricity and Capital Accumulation in South Africa’ in D McDonald (ed) *Electric Capitalism: Recolonising Africa on the Power Grid* (2008), 8.

<sup>7</sup> Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016).

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> White Paper on Renewable Energy of the Republic of South Africa November (2003) 25.

mainly come from the burning of coal to produce electricity.<sup>11</sup>

Given the global context set out above, it is important that countries eliminate any implementation inefficiencies that make the uptake of renewable energy difficult and unattainable. South Africa is blessed with ample land space and receives high irradiation making the implementation of solar and wind less complicated when compared to some European countries who, because of the lack of land or space, opt for more expensive technologies such as offshore wind to bolster their renewable energy efforts.<sup>12</sup> Even though South Africa is blessed with geographic advantage as mentioned, the country is currently experiencing an energy crisis in the form of electricity shortage.<sup>13</sup> This means the country is not producing enough electricity to meet the electricity demands of the country.<sup>10</sup> The crisis is currently at its peak with the country experiencing power shortages almost every day since the beginning of 2023.<sup>14</sup> This obviously has serious repercussions for the economy which has only grown by 0.3% since 2019.<sup>15</sup> There are several contributing factors to this crisis; some of the reasons are technical, such as the low energy availability factor of the Eskom power fleet (technical reasons are not the purview of this study); some of the reasons are legal (which will be discussed in this paper), and some are political, such as the delay in signing the power purchase agreements (PPA) of the preferred bidders of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) bid window round 4,<sup>16</sup> and the DMRE not awarding preferred bidders for wind in the REIPPPP bid window 6.<sup>17</sup>

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<sup>11</sup> International Energy Agency 2020 'data on statistics' <<https://www.iea.org/statistics/co2emissions/>>

<sup>12</sup> State of Renewable Energy in South Africa (2015) <<https://www.energy.gov.za/files/media/pub/state-of-renewable-energy-in-south-africa.pdf>>.

<sup>13</sup> Energy Action Plan January Update January 2023 at <<https://www.thepresidency.gov.za/content/update-energy-action-plan-january-2023>>.

<sup>14</sup> Ibid.

<sup>15</sup> <<https://businesstech.co.za/news/energy/674207/after-141-days-of-blackouts-eskom-gives-south-africa-its-first-full-day-of-no-load-shedding/>>.

<sup>16</sup> Minister Jeff Radebe: Renewable Energy Independent Power Producer Procurement Programme 24 February 2019 <<https://www.gov.za/speeches/media-statement-minister-energy-jeff-radebe-renewable-energy-independent-power-producer>>. Lack of signing PPAs created a 3 year market uncertainty.

<sup>17</sup> Denene Erasmus 'Wind Power loses out as grid constraints strangle green energy rollout 9 December 2022, <<https://www.businesslive.co.za/bd/national/2022-12-09-wind-power-loses-out-as-grid-constraints-strangle-green->

This paper focuses on the legal impediments that make the implementation of renewable energy difficult. It will focus on the legislative planning regime and the process of the issuing section 34 determinations. The paper will also assess the rationale of regulation in respect of energy and argue for a more decentralised approach that has elements of hybrid-regulation whilst still appreciating the rationale of state led regulation. This paper calls for a decentred regulatory model as the decentring analysis accepts that there are complex interactions and inter-dependencies between social actors and the government.<sup>18</sup> Julia Black points out that a new way of understanding regulation is to observe ‘that regulation is a two-way, or three-way or four-way process, between all those involved in the regulatory process’.<sup>19</sup> Further, the dated thinking that government possessed all the solutions and society had all the problems that required the intervention of the state is no more, and rather, both society and government can be seen to possess problems and solutions, the call is for them to be dependent on each other to find the solutions.<sup>20</sup>

The decentring analysis calls for the collapse of the distinction between the public (government) and the private.<sup>21</sup> Such a collapse opens the thinking for ‘hybrid organizations or networks that combine governmental and non-governmental actors in a variety of ways’, this is the so called new ‘corporatism’.<sup>22</sup> Under this thinking, regulation comes as a result of collective action and collective understanding.<sup>23</sup> Such a process is likely to produce a more effective regulatory regime with less blind spots. This proposed regulatory regime solves the mischief of conventional state regulation which is that, no single actor possesses super oversight and knowledge that is not self-

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energy-rollout/>.

<sup>18</sup> J Black ‘Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a ‘Post- Regulatory’ *Current Legal Problems* (2001) 109.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid* 110.

<sup>21</sup> Black (note 17 above)110.

<sup>22</sup> P Streeck and P Schmitter ‘Community, Market, State -and Association? The Prospective Contribution of Interest Governance to Social Order’ in P, Streeck and P Schmitter (eds) *Private Interest Government: Beyond Market and State* 1985, 20.

<sup>23</sup> *Ibid.*

referential, this point will be expanded further in part 2 of this paper under the decentred analysis.

Decentralisation should not be confused with the call for lawlessness and disorder. That is not the point of this study. This paper appreciates and recognises the importance of legislation and regulation as key fundamentals to the function of societies and the regulation of industries. It is trite that the orderly administration of things largely, and industries to be particular, requires coherence and order. Where this study becomes important is its appreciation that order and coherence does not all come from, and need not come from a centralised government authority to the exclusion of others. With the above in mind, this paper proposes that South Africa needs to have legislation that is specifically formulated for renewable energy as it is the case in countries with mature renewable energy markets like Germany and Spain.<sup>24</sup>

The paper finds that the Electricity Regulation Act 4 of 2006 (ERA) is not appropriate legislation for the regulation of renewable energy. The government has already recognised this and hence there is a ERA amendment bill underway that proposes fundamental changes to the electricity market of South Africa. The paper posits that, while good intentions and a lot of work went into the proposed changes, the panel beating of the ERA is not going to render appropriate results for the regulation of renewable energy and hence the call for renewable energy specific legislation. This study will draw some key points from the German Renewable Energy Sources Act, 2017 (EEG) which has examples of decentralised regulation while prioritising renewable energy. The paper does not propose a cut and paste approach of what the developed nations have done in terms of their laws and application of renewable energy.<sup>25</sup> This research is cognisant of the different contexts of the countries but finds important points that can be drawn from other jurisdictions.

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<sup>24</sup> T Murombo 'Law, Regulation and the Promotion of Renewable Energy in South Africa' Doctor of Philosophy School of Law, University of the Witwatersrand (2015) 38.

<sup>25</sup> Ibid.

## 2. Justification For Renewable Energy Regulation

The term regulation is a hotly contested topic as there is no agreed definition of the term.<sup>26</sup> There seems to be no universal acceptance of whether regulation comes before law or whether it is a subset of law.<sup>27</sup> There are many attempted definitions of the term but the one that seems more apt is provided by Black as follows ‘regulation is the sustained and focused attempt to alter the behaviour of others according to defined standards or purposes with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard-setting, information-gathering and behaviour modification.’<sup>28</sup> What we read from the definition above is that the purpose of regulation is to change or manage behaviour of persons, according to set standards the regulator wants a select group of persons to abide, for purposes of achieving a specific behavioural outcome. Seemingly as Barton observes, regulation is intentional, and goal orientated.<sup>29</sup> The target of regulation is usually for behaviour or activities that are most valued or least tolerated.<sup>30</sup> Barton argues that often, the target of regulation is an economic activity<sup>31</sup> although we know there are other important social activities that are regulated such as children’s rights, and criminal conduct.

Barton posits that, from an economic perspective, regulation properly understood functions to bring markets into existence, he argues that regulation is not external to markets.<sup>32</sup> With this in mind, this argument supports the position of this paper which is, to have a functional renewable energy industry in South Africa, an appropriate regulatory regime needs to exist so to provide

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<sup>26</sup> B Barton ‘The Theoretical Context of Regulation’ *Oxford University Press* (2006) 12.

<sup>27</sup> *Ibid* 11.

<sup>28</sup> J Black ‘Critical Reflections on Regulation’ *Aust J Leg Phil* 1 (2002) 20.

<sup>29</sup> Barton (note 25 above) 13.

<sup>30</sup> *Ibid*.

<sup>31</sup> *Ibid* 11.

<sup>32</sup> *Ibid* 12.

market players an entry point to the industry. Barton also importantly notes that the actors in a regulatory regime can also be non-state actors.<sup>33</sup> However, regulation is often institutionalised and purposefully bureaucratic as it requires rule making, monitoring and enforcement.<sup>34</sup> In terms of non-state regulators as described above, Barton argues that these regulators are somewhat a ‘conundrum constitutionally’, although the theories of the decentralisation of regulation provide for their justification which will be explained in detail later.

### 2.1. Justification of regulation – economic perspective

Economic theories see the rationale of regulation where there is a demonstration of market failure which cannot be remedied by private law.<sup>35</sup> Market failure describes a situation where competitive markets do not produce efficiency because of imperfect competition, transaction costs or third-party effects.<sup>36</sup> The electricity industry in South African especially around the REIPPPP process demonstrates a situation that is akin to market failure and thus in desperate need for regulation. In this section, the paper demonstrates examples of market failure and the lack of private law to remedy it in the context of the REIPPPP. The REIPPPP is the initiative of the South African government aimed at introducing new electricity generation capacity through the private sector by procuring electrons through bid rounds or bid windows (these terms are used interchangeably in this paper). So far, there has been 6 bid windows. These bid rounds indicate the number of times the government has sought the private sector to procure electricity in accordance with section 34 ministerial determinations.

The DMRE invited bidders to participate in the REIPPPP bid window 6. To participate in this procurement process, a bidder must first make sure it has the capability in house to respond to

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<sup>33</sup> Ibid 16.

<sup>34</sup> Ibid.

<sup>35</sup> Barton (note 25 above) 17-18.

<sup>36</sup> Ibid.

the RFP, and if not, appoint an external party to assist with the process.<sup>37</sup> To start the process the bidder must purchase the RFP document which costs around ZAR25 000 per project.<sup>38</sup> The bidder then needs to appoint external advisers to provide independent legal opinions on certain subjects (such as opining on the bidder's land rights and environmental approvals) and then have an external adviser provide an audited financial model (to rationalise their price and margins) in addition to other governmental consents that require finances to obtain.<sup>39</sup>

A bidder would typically spend around ZAR5 million to bid a project into a REIPPPP round just on transaction costs, in addition, the bidder also needs to procure a bid bond (usually in the form of a bank guarantee at the rate of ZAR200 000 per MW bid).<sup>40</sup> This bid bond is to merely provide security that the bid submitted is a compliant bid, meaning the bid satisfies the legal and other compliance requirements.<sup>41</sup> Eberhard argues that the provision of a bid bond model is a good mechanism to deter inexperienced and financially constrained bidders who would otherwise not have the monetary ability to undertake the development of the intended facility.<sup>42</sup> There are many issues with the model described above which are not the subject of this study such as the elitist nature of the REIPPPP bidding process which, contrary to the intentions of the DMRE does not encourage participation of local players or enhance local content. So the barriers of entering the market are real and tough.

Bearing in mind the financial and administrative costs mentioned above, the DMRE declared all bidders of wind technology in round 6 to have all been unsuccessful because of the unavailability

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<sup>37</sup> A Eberhard & R Naude 'Recommendations for the Design of Successful Renewable Energy Auctions or Competitive Tenders in Africa Lessons Learned from South Africa'

<<https://www.gsb.uct.ac.za/files/REIPPPPLessonsRecommendations.pdf>>.

<sup>38</sup> <<https://www.ipp-renewables.co.za>>.

<sup>39</sup> IPP Procurement Programme 2012 GN 1074 GG 32964 on 19 December 2012. Section 34(1) of the Electricity Regulation Act 4 of 2006 (ERA) and the Electricity Regulations on New Generation Capacity (published as GNR. 399 in *Government Gazette* No. 34262 dated 4 May 2011 (the New Generation Capacity Regulations).

<sup>40</sup> Eberhard (note above 36) 10.

<sup>41</sup> REIPPPP Request for Proposals (note 38 above).

<sup>42</sup> Eberhard (note above 36) 17.

of grid connection in the cape provinces (grid connection refers to transmission and distribution infrastructure operated by the government).<sup>43</sup> These bidders have lost millions on this tender process only to be ‘disqualified’ as a result of a third party’s doing i.e. Eskom’s lack of transmission infrastructure and its failure to inform the DMRE and the IPP Office of the grid challenges. There is nothing bidders can do to recover their bid related losses and there is no private law remedy they can pursue to recover these. They cannot even legally compel the DMRE to decide on their bids.<sup>44</sup>

The example above shows the justification for regulation of the renewable energy sector. It is not enough to have a major procurement of renewable energy be undertaken by the state and only to sell to the state. Procuring power for a country with an energy crisis needs not be a cumbersome and expensive process as it is now. It is important to mention that the RFPs issued by the DMRE also request bidders to hand in hard copies on the day of bid submission, this whole process could be digitised to ameliorate the already laden financial and administrative burden.<sup>45</sup> This is a perfect example of what looks like market failure in the energy sector.

It is important to mention the positive regulatory changes that have been occurring as the regulatory space has opened to allow energy intensive users (amongst others) to procure power for their own consumption through the amendment of Schedule II of the ERA.<sup>46</sup> The market has seen several RFPs from mining companies and smelters inviting the Independent Power Producers (IPPs) to bid to provide them with power.<sup>47</sup> Mining companies also had to spend money by hiring experienced personnel to understand the renewable energy sector.<sup>48</sup> The latter is good news as

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<sup>43</sup><<https://www.engineeringnews.co.za/article/only-six-solar-projects-advance-to-preferred-bidder-status-following-latest-renewables-round-2022-12-08>>.

<sup>44</sup> REIPPPP Request for Proposals (note 38 above).

<sup>45</sup> Ibid.

<sup>46</sup> Schedule 2 of the ERA section 2.

<sup>47</sup> Sasol and Air Liquide to launch the Renewable Energy procurement programme for SA operations, 13 April 2021 <<https://www.sasol.com/sasol-and-air-liquide-launch-renewable-energy-procurement-programme-sa-operations,>>.

<sup>48</sup> Traditional coal mining companies have established renewable energy affiliates such as Cinnergi owned solely by

intensive energy users have to understand and quickly undertake their net-zero pledges.

## 2.2. The Neo-liberal and public choice critique of regulation

It is important to mention that regulation is not a perfect cure for all things. The neo-liberal critique posits that government needs to have a minimal role in markets and focus on private law to protect property rights and other manifestations of public law.<sup>49</sup> This critique argues that, regulation based on governmental intervention is doomed to fail.<sup>50</sup> The public choice critique elaborates more on the latter by stating that eventually, interventionist regulation does not succeed in its intended purpose as it may eventually become subject to “regulatory capture”.<sup>51</sup> Regulatory capture describes a situation where regulation fails because regulators eventually succumb to the will of the entities they are supposed to regulate.<sup>52</sup> The public choice critique does not see the role of regulation for public interest, the critique surmises that regulation seemingly pursuing a public good is actually serving the private interests of the group that it is seeking to regulate.<sup>53</sup>

The public choice critique has elements of truth especially in South Africa where there is overwhelming evidence of private companies providing financial compensation to government officials and various entities in exchange for favours or favourable outcomes on certain matters in the regulatory space.<sup>54</sup> This coincides with Barton’s statement that ‘regulators, regulates, and legislators all act as if in a competitive market, seeking to advance their own wealth and influence’.<sup>55</sup>

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Exxaro Resources and Seriti Green with Seriti Resources as a majority shareholder <<https://cennergi.com/leadership/>> and <<https://seritigreen.com/about/>>.

<sup>49</sup> Barton (note 25 above) 17 and T. Prosser ‘Law and the Regulators’ Oxford: Clarendon Press (1997).

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> D Farber and P Frickey ‘Law and Public Choice: a critical introduction’ *Chicago University Press*.

<sup>53</sup> Barton (note 25 above) 18.

<sup>54</sup> Example is the alleged corruption in the mining sector <<https://www.news24.com/citypress/business/incompetence-corruption-at-core-of-delayed-licences-experts-20230609>> and revelations from the Zondo Commission.

<sup>55</sup> Barton (note 25 above) 18.

### 2.3. Who is competent to regulate?

This is an important question asked by Barton and many others in the subject of regulation.<sup>56</sup> At the heart of this question is really whether state or non-state regulators can co-regulate or whether it's a zero-sum game between the two. What is clear is that whoever is given the powers to regulate needs to have the capacity to conduct ongoing long-term engagements with the specific area or activity that is being regulated.<sup>57</sup> This is because regulation is not a one-time event but an ongoing activity.<sup>58</sup> It is easy to understand the role of the regulator when the regulator is an apparatus of the state but even with non-state regulators, the regulatory mechanism is the same. For example, the regulation of an association of professionals requires ongoing engagements and monitoring of the behaviour of the regulatees and their activities.<sup>59</sup> Such a regulatory institution would need to have people work for the regulator. Members of the regulated group may pay membership fees to be part of the group and to partially fund the regulator. Such a regulator may have the powers to issue rules of conduct, penalties where rules are not adhered to and have the capacity to conduct ongoing monitoring of rule compliance. In summary, regulation can be undertaken by both state and non-state actors.<sup>60</sup>

### 2.4. The Decentred Analysis on Regulation

Regulation can thus be undertaken by state and non-state actors. Black states that the term decentring is used to 'express an observation that governments do not, and the proposition that they should not, have a monopoly on regulation and that regulation is occurring within and between other social actors'.<sup>61</sup> Black further observes that regulation is always happening within and between large organisations and collective associations, and all occurring without

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<sup>56</sup> Ibid. .

<sup>57</sup> Ibid.

<sup>58</sup> Ibid.

<sup>59</sup> Black (note 17 above).

<sup>60</sup> Ibid 103.

<sup>61</sup> Ibid.

government's involvement.<sup>62</sup>

Decentring understandings are posited as the 'other'; being the other to regulation undertaken by the state.<sup>63</sup> Black postulates that a significant differentiator between state regulation and decentred regulation is the element of command and control that exists in state regulation, and not necessarily in decentred regulation.<sup>64</sup> With state regulation, legal rules are often backed by criminal sanctions hence the term command and control.<sup>65</sup> Black acknowledges that the command and control description of state centred regulation is a superficial, rather than 'an accurate description of the operation of any particular regulatory system'.<sup>66</sup>

State regulation is often described as centred, this term suggests the state has the capacity to be the 'only commander and controller, and to be potentially effective in commanding and controlling'.<sup>67</sup> This regulation style is assumed to have a unilateral top-down approach where the state will command to the regulatees i.e., tell them what to do and never the other way.<sup>68</sup> Centred regulation is criticised for being archaic as the instrument of command and control is ineffective because governments often do not have sufficient knowledge to be able to anticipate problems, and come up with solutions that are appropriate where there are rule compliance challenges.<sup>69</sup> Decentred understandings are based on the appreciation that the nature of society and government has changed, and so has the nature of the relationship between the two.<sup>70</sup>

The relationship between government and society has become complex as a result of the interactions between the actors within a society and such, the 'recognition of social problems

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<sup>62</sup> Ibid.

<sup>63</sup> Black (note 17 above) 105.

<sup>64</sup> Ibid.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> Ibid 106.

<sup>68</sup> Ibid.

<sup>69</sup> Ibid.

<sup>70</sup> Ibid.

are the result of various interacting factors, not all of which may be known, the nature and relevance of which changes over time, and the interaction between which will be only imperfectly understood'. The government no longer holds all the answers.<sup>71</sup>

Another important criticism of centred regulation is the 'fragmentation, and construction of knowledge'.<sup>72</sup> The fragmentation and construction of knowledge comes from information asymmetry that exists between the regulator and those subject to the regulations.<sup>73</sup> In the South African renewable energy context, this simply means that government does not have information that the industry players possess, and as such, government will always lag behind the market. There is the assertion that 'government cannot know as much about industry as industry does about itself'.<sup>104</sup> Renewable energy companies know the latest developments in the industry, they understand where the industry is going and universally, they know how they are affected by government regulation.

The South African renewable energy industry is regulated by the DMRE, Eskom, NERSA amongst other bodies, all these parties are acting as the state apparatus.<sup>74</sup> The problem of information asymmetry is very prevalent in the interaction between the regulators themselves, and the regulated renewable energy industry. One fundamental example of information asymmetry that displayed itself on the world stage is when the DMRE found out from Eskom that there was no grid capacity to connect wind projects in the cape provinces. As a result, 3200MW of renewable energy remains unallocated in bid window 6.<sup>75</sup> As an industry participant, one assumes that if the DMRE being the major planning and energy determination authority in South Africa issues an RFP, they would have all sufficient information necessary to effect the

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<sup>71</sup> Ibid 107.

<sup>72</sup> Ibid.

<sup>73</sup> T Murombo 'Regulating Energy in South Africa: Enabling Sustainable Energy by Integrating Energy and Environmental Regulation' (2017) *Journal of Energy & Natural Resources Law*,

<sup>74</sup> Electricity Regulation Act.

<sup>75</sup> <<https://www.engineeringnews.co.za/article/only-six-solar-projects-advance-to-preferred-bidder-status-following-latest-renewables-round-2022-12-08>>

promises made in the respective RFP. However, in 2022, this proved to not be the case showing that the problem of information asymmetry does not only exist between the regulator and the regulated, but also exists between the regulators themselves. This speaks to the fragmentation of the energy sector of South Africa. There are simply too many actors from a government perspective, and this has led to a fundamental regulatory failure.

What is interesting about the decentring analysis is that, it does not assume that one actor has all the knowledge necessary to solve complex problems such as the energy crisis in South Africa.<sup>76</sup> This is because, as Black points out, information is socially constructed.<sup>77</sup> This means that members of a system, or a sub-system will only see and interpret information through the distorted lenses of their perceptual reality based on their environment and experiences.<sup>78</sup> Under these circumstances, the rules of their system are always a reference point for information interpretation and as such, Black finds that there are no ‘objective social truth’ as information is a social construct.<sup>79</sup>

With this theoretical basis, it is clear that no one party in the various social systems has a monopoly on, or has the ultimate information overview to be able to solve the regulatory challenges that face the South African renewable energy industry. That is the reason this paper calls for a decentred regulatory model as the decentring analysis accepts that there are complex interactions and inter-dependencies between social actors *inter se*, and the government.<sup>80</sup> Black points out that a new way of understanding regulation is to observe that regulation is a two-way, or three-way or four-way process, between all those involved in the regulatory process’.<sup>81</sup> Further, the dated thinking that government possessed all the solutions and society had all the

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<sup>76</sup> Black (note 17 above) 107.

<sup>77</sup> Ibid.

<sup>78</sup> Ibid.

<sup>79</sup> Ibid.

<sup>80</sup> Black (note 17 above) 108.

<sup>81</sup> Ibid 109.

problems that required the intervention of the state is no more.<sup>82</sup> Rather, both society and government can be seen to possess problems and solutions, the call is for them to be dependent on each other to find the solutions.<sup>83</sup>

The decentring analysis calls for the collapse of the distinction between the public (government) and private.<sup>84</sup> Such a collapse opens the thinking for ‘hybrid organizations or networks that combine governmental and non-governmental actors in a variety of ways’ the so called new ‘corporatism’.<sup>85</sup> One example of the new corporatism is Streeck and Schmitter’s ‘private interest governments’ where the government still possesses authority however, private entities also share the state’s authority by being able to make legally binding decisions that possess a state like effect.<sup>86</sup> In this case, ‘governance and regulation are seen to be the outcome of interactions of networks, or alternatively ‘webs of influence’ which operate in the absence of formal governmental or legal sanction.’<sup>87</sup>

Under this thinking, regulation comes as a result of collective action and collective understanding. Such a process is likely to produce a more effective regulatory regime with less blind spots. This proposed regulatory regime solves the mischief of conventional state regulation which is that no single actor possesses super oversight and knowledge that is not self-referential.<sup>88</sup> The government of South Africa could have greatly benefited from having had industry at the formulation of the Electricity Regulation Act Amendment Bill (ERA Bill), which has now received the approval of cabinet and ready to be tabled for parliament.<sup>89</sup> Asking the public to comment on a bill that has already been worked on is counterproductive. The regulatory

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<sup>82</sup> Ibid 110.

<sup>83</sup> Ibid.

<sup>84</sup> Ibid.

<sup>85</sup> P Streeck & P Schmitter ‘Community, Market, State -and Association? The Prospective Contribution of Interest Governance to Social Order’ in P, Streeck & P Schmitter (eds) *Private Interest Government: Beyond Market and State* 1985, 20.

<sup>86</sup> Ibid.

<sup>87</sup> Black (note 17 above) 111.

<sup>88</sup> Ibid 104.

<sup>89</sup> Electricity Regulation Act Amendment Draft Bill GN. 45898 of 10 February 2022.

strategies proposed by the decentred analysis call for government and non-government actors to work together for optimal regulatory outcomes.

This study will not discuss self-regulation which is also a sub-set of the decentring understandings as it does not see its applicability to the theme of this paper, this is because this paper calls for a hybrid style regulation that is collaborative between the public and private sector, hence the advocacy for renewable energy specific legislation. Further, the argument against engaging with self-regulation is that, there does not seem to be a solid agreement or description of what it is.<sup>116</sup> Black asks without giving an answer what the difference is between ‘self-regulation, co-regulation, quasi-legal regulation, and voluntarism?’<sup>90</sup> Black continues to ask if self-regulation refers to the regulation of associations or individual firms.<sup>91</sup> This paper does not see its relevance when discussing energy regulation partly because the ‘how to regulate guides’ of various governments suggest that self-regulation should not be used for matters of high public interest.<sup>92</sup> Energy falls under a category of subjects that are of high national importance. Generally, matters which do not attract state regulation are matters that are of minimal consequence, we regulate matters that society cares about.<sup>93</sup>

### 3. Legal Framework of Renewable Energy in South Africa

#### 3.1. Introduction

There is no single legislation in South Africa that exclusively regulates renewable energy. Renewable energy is regulated under various energy legislations many of which were designed to regulate the fossil fuel industry.<sup>94</sup> This source of energy has simply been slotted into old

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<sup>90</sup>Black (note 17 above) 113.

<sup>91</sup> Ibid.

<sup>92</sup> Ibid.

<sup>93</sup> Barton (note 25 above) 103

<sup>94</sup> T Murombo ‘Regulatory Imperatives for Renewable Energy: South African Perspectives’ *Journal of African Law* (2022) 97.

legislation and forced to find fit and applicability.<sup>95</sup> The legislation that has been used to promote and regulate renewable energy pertaining to electricity production is arguably the ERA. The ERA has been regulating the electricity industry since 1987<sup>96</sup> (although the 1987 legislation was repealed by the current ERA) and as such, it was drafted with the paradigm of an electricity industry that is largely dominated by a vertically integrated state monopoly who is the main generator, transmitter and distributor of electricity in the country.<sup>97</sup> Because of this historical context, the ERA is highly inappropriate as legislation that governs renewable energy especially under the forward looking paradigm where the IRP anticipates that the energy mix of South Africa will be dominated by renewables by the year 2030.<sup>98</sup>

There has been efforts to rethink the ERA through the publication of the ERA Bill where several market changing propositions were made. These include the introduction of the Transmission Systems Operator (TSO) that will serve as a public trading platform for electricity and several other new insertions to cater for the current renewable energy lacuna that exists in the ERA.<sup>99</sup> For example, the ERA Bill inserts renewable energy language around some simple terms such as the definition the word Independent Power Producer.<sup>100</sup> The fact that a simple definition of IPP is missing shows how far behind the renewable energy legal framework of South Africa actually is. This study will not review all energy related legislation but will mainly focus on these laws in terms of their applicability to renewable energy. This study assumes working knowledge of the applicable sections and will mainly provide an analysis of the relevant laws.

### 3.2. Renewable Energy Policy

Renewable energy became part of the South African legal discourse as a result of the publication

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<sup>95</sup> Ibid.

<sup>96</sup> Electricity Regulation Act 41 of 1987.

<sup>97</sup> Murombo (note 92 above) 97.

<sup>98</sup> IRP Note 2 above.

<sup>99</sup> Electricity Regulation Act Amendment Draft Bill GN. 45898 of 10 February 2022.

<sup>100</sup> Ibid.

of the White Paper on Energy Policy of the Republic of South Africa of 1998 (Energy White Paper). In the Energy White Paper, the government acknowledged that it had neglected the development and application of renewable energy as a reliable energy source.<sup>101</sup> The government stated that as part of its renewable energy policy it shall, amongst other things invest an equitable amount of the country's resources in renewable energy technologies.<sup>102</sup>

Five years after the publication of the Energy White Paper, a further policy document that was specific to renewable energy was published. The White Paper on Renewable Energy of the Republic of South Africa of 2003 (Renewable Energy White Paper) is a policy document that clearly codified government's intention to pursue renewable energy in South Africa. The government committed to integrate renewable energy into South Africa's energy mix by committing to achieve a target of 10 000 GWh of renewable energy into the country's energy mix by 2013.<sup>103</sup>

The Renewable Energy White Paper acknowledges the need for the reduction of the use of fossil fuels to reduce South Africa's GHGs emissions<sup>104</sup> Murombo argues that "this is the clearest direct connection between renewable energy and climate change in South Africa".<sup>105</sup> The two policy documents discussed became important preludes to the enactment of energy regulation legislation such as the ERA, National Energy Act 40 of 2008 (NEA) including others.

### 3.3. Electricity Regulation Act and Renewable Energy

The purpose of the ERA is to establish the electricity regulation framework of South Africa and

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<sup>101</sup> White Paper on the Energy Policy of the Republic of South Africa December (1998) 79.

<sup>102</sup> Ibid.

<sup>103</sup> White Paper on Renewable Energy of the Republic of South Africa November (2003) 25.

<sup>104</sup> White Paper on Renewable Energy (note 100 above) vii.

<sup>105</sup> T Murombo 'South Africa's energy mix: Towards a low-carbon economy' in T Humby et al (eds) *Climate Change: Law and Governance* 18-11.

make NERSA the regulator, custodian and enforcer of the electricity framework.<sup>106</sup> The ERA has bestowed NERSA with the powers to issue licences for the whole value chain of the electricity industry, and to provide on-going regulation of the sector.<sup>107</sup> Section 2 of the ERA provides a broad list of its objectives some of which include, the promotion of ‘the use of diverse energy sources and energy efficiency’;<sup>108</sup> to ‘achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa.’<sup>109</sup>

The objectives of the ERA read collectively are not codified within the context of reducing GHGs emissions, and are not properly contextualised within the climate change and renewable energy legal and policy framework of the country.<sup>110</sup> This is because the ERA was not enacted for purposes of promoting or regulating renewable energy.<sup>111</sup> However, as a legal and policy choice, the ERA is being used to promote and integrate renewables into the electricity framework.

It would be incorrect to posit that the ERA does not have elements of sustainability entrenched, for example, section 2(b) provides that the ERA has the objective to ‘ensure that the interests and needs of present and future electricity customers and end users are safe guarded and met, having regard to the governance, efficiency effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic.’ It can be argued that the wording of this section shows that the ERA is cognisant of the needs of future energy users and that these have to be met with long-term sustainability in mind, and in line with the broader context of energy regulation in South Africa. This can be read

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<sup>106</sup> Preamble of the Electricity Regulation Act.

<sup>107</sup> Ibid.

<sup>108</sup> Section 2(e) of the Electricity Regulation Act.

<sup>109</sup> Section 2(a) of the Electricity Regulation Act

<sup>110</sup> Ibid.

<sup>111</sup> T Murumbo ‘Regulatory Imperatives for Renewable Energy: South African Perspectives’ *Journal of African Law* at 1.

with section 2(e) where the ERA aims to promote the diverse use of energy sources. Although diverse use of energy sources does not necessarily mean renewable energy, however, the broad wording allows the inclusion of renewable energy to be an applicable objective. This of course is a generous interpretation of statute and to eliminate this, the country needs to develop a separate legislative framework dedicated to regulating renewable energy.<sup>112</sup>

NERSA is also the regulator of the petroleum and gas industry.<sup>113</sup> This is a regulator that adorns many hats and services different industries. NERSA has seemingly been good at regulating different industries particularly the electricity sector, although there are challenges with the regulator sticking to timelines for the provision of generation licences. As an example, section 13 of the ERA provides that NERSA must provide a decision on a generation licence within 120 days after all application processes have been completed. This timeline is seldom adhered to hence the legislative amendments to schedule 2 of the ERA where some licencing requirements were removed, was highly welcomed by the renewable energy industry.<sup>114</sup>

In the face of an energy crisis where the country needs to provide electrons to the grid, having to stick to many prolonged administrative processes to be able to produce electricity is counterproductive and does not show that the country is in a state of disaster as legally proclaimed.<sup>115</sup> The ERA licencing and registration processes are heavily administrative and take a long time to obtain. The registration process is much better than applying for a generation licence as the process can take up to 3 months, this is a highly welcomed improvement.<sup>116</sup>

Section 34 of the ERA broadly gives the Minister the power to determine new generation

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<sup>112</sup> Murombo (note 108 above) 1.

<sup>113</sup> Section 4 of the National Energy Regulator Act 40 of 2004.

<sup>114</sup> Schedule 2 of the Electricity Regulation Act.

<sup>115</sup> Regulations made in terms of section 27(2) of the Disaster Management Act 57 of 2002.

<sup>116</sup> Schedule 2 of Electricity Regulation Act.

capacity necessary for continued uninterrupted supply of electricity and determine the types of energy sources such electricity must be generated, together with the applicable percentages. The promulgation of the regulations pertaining to new generation capacity were issued in terms of section 34 of the ERA<sup>117</sup> which later influenced the framework of the REIPPPP. This programme is a pathway South Africa chose to procure renewable energy after attempting other policy mechanism like the Renewable Energy Feed-In Tariff proposed by NERSA, which was subsequently not adopted.<sup>118</sup>

The REIPPPP is based on a competitive auction model where the DMRE releases a Request for Proposals (RFP) inviting interested participants to respond to the RFP so to build, own and operate a renewable energy facility that will produce electricity to be sold to whomever the section 34 determination prescribes. So far, Eskom has been determined to be the single buyer with the Department of National Treasury providing state guarantees to the successful bidders.<sup>119</sup> These guarantees are to secure the payment obligations of Eskom under the applicable power purchase agreements (PPAs).<sup>120</sup>

### 3.4. Electricity Regulation Amendment Bill

The ERA Bill was published for public comment in February 2022. The scope of this section is to only focus on the new things that are being proposed by the bill. The preamble of the ERA Bill states that its purpose, amongst other things is to establish the TSO and to create a competitive multi market structure for the electricity industry. It is important to note that this bill is not tabled for a motion in parliament as yet but has been approved by cabinet for tabling.<sup>121</sup>

This research indicates that the proposed changes in the ERA Bill do not go far enough to address

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<sup>117</sup> Electricity Regulations on New Generation Capacity GN R721 GG 32378 of 5 August 2009.

<sup>118</sup> South Africa Renewable Energy Feed-in Tariff (REFIT) Regulatory Guidelines GN 382 dated April 20

<sup>119</sup> REIPPPP Request for Proposals bid number Reissued for the Sixth Bid Submission Phase Tender No: DMRE/001/2022/23, Power Purchase Agreement issued for Request for Proposals bid number Reissued for the Sixth Bid Submission Phase Tender No: DMRE/001/2022/23.

<sup>120</sup> Ibid.

<sup>121</sup> Bills Currently in Parliament <<https://www.parliament.gov.za/bills>>.

the real pressing issues that require a total reform of the electricity sector. These changes require a bold legislative muscle to drive the country to where it needs to be and this boils down to policy decisions that need to be made at a political level. The ANC policy statement of 2022 on energy unequivocally hails the ERA Bill as an instrument of hope for opening the market and solving the electricity crisis,<sup>122</sup> this I argue, is only part of the solution.

Section 1 of the ERA Bill provides several terms whose definitions have a discourse that speaks to elements of an open and competitive market. These terms are provided without sufficient clarity and context, for example the term Central Purchasing Agency ‘means an entity within the TSO assigned to fulfil the role of the Single Buyer while allowing for a transition for a competitive market, a buyer of legacy power purchase contracts, and may purchase additional capacity and energy as required to maintain system integrity in a competitive environment.’

The definition above is not clear, the term Single Buyer is not defined so the reader does not know what or who a single buyer is, so context and clarity is missing. The TSO being a very important introduction to the ERA Bill is not defined. However, section 31 describes the TSO and provides a long list of its functions. From this reading it seems the TSO is an all-encompassing super entity that will do all things electricity related from opening the market and managing transmission infrastructure, whilst also providing day to load-forecasts to customers. This is a lot of work for one entity. The proposal presented in the ERA Bill has good intentions but, it is my reading that it is an impractical solution that will be difficult to implement.

Section 32 of the ERA Bill provides the description of the market structure, it is a somewhat piecemeal description of the intended competitive market structure (again the description lacking

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<sup>122</sup> ANC National Policy Conference ‘Policy Conference 2022’ *Umrabulo* 18 May 2022 at 145 – 146 <<https://docs.google.com/viewerng/viewer?url=https://www.anc1912.org.za/wp-content/uploads/2022/05/Umrabulo-Policy-Document-18th-May-2022.pdf>>.

key fundamental insights) but it does not tell us who the market operator is amongst other important omissions. It seems like this was a copy and paste approach of another legislation with the intention that it will be applicable to the electricity industry.

From a practicality standpoint, section 10(2)(g) of the ERA was deleted, this section required NERSA to consider the applicant's compliance with the IRP when considering a generation licence application. This paper finds that this is an important deletion that is congruent with the title and thinking of this paper because the government has realised the impracticality of restricting licence applications only to those who show compliance with the IRP, while the country has an energy crisis. This thinking is aligned with the call for a legal model towards a decentralised planning and determination regime that is liberal and allows the private sector to develop and implement renewable energy facilities specifically without unnecessary restrictions.

The purpose of the analysis above is to show where the legislative thinking was heading in terms of electricity regulation. The intended changes in the ERA Bill are to a large extent congruent with a regime that is liberal and has opened up the market for private sector industry players to perform a meaningful role on how the sector is regulated. This study notes that there are attempts to ameliorate the existing renewable energy regulation problem. However these attempts are not enough and fitting and as such, South Africa requires a renewable energy focused legislation such as the EEG to really address the crisis.

### 3.5. Planning Renewable Energy

National Energy Act (NEA) is the key overarching legislation in respect of energy planning in South Africa. The NEA is legislation that was intended to implement the South African Energy White Papers. It implements the White Papers broadly without being technology specific, that is the reason there are a number of laws that deal with various energy sectors such as gas, nuclear

and electricity. The objects of the NEA as listed in section 2 are as follows: to safeguard energy security by ensuring that there is uninterrupted energy supply in South Africa, to promote diverse energy sources, and important for this chapter, ‘ensure effective planning for energy supply, transportation and consumption.’

Section 6(1) of the NEA mandates the minister of the DMRE to ‘develop, and on an annual basis, review and publish the Integrated Energy Plan’. The purpose of the Integrated Energy Plan is to deal with matters related to energy supply and demand with a planning horizon of not less than 20 years.<sup>123</sup> For many years the government has not adhered to the timelines of providing an update on the Integrated Energy Plan as prescribed, and has failed to provide reasons for the delays.<sup>124</sup> The reasons for the delay in providing updates are suspected to be of a political nature where certain industry players and/ government officials wanted to meddle with the energy trajectory of the country by favouring some technologies over others.<sup>125</sup>

The decentralised understandings were formulated to address the challenges where regulators are captured by the entities whom they are meant to regulate.<sup>126</sup> It is my view that had there been a hybrid methodology with regards to the planning regime in terms of the NEA, where there was an invitation of non-government entities in planning process, there would not have been a multi-year wait for this document or suspicions of secrete conversations about the preferred technology choices which the public had no say in.

The IRP is most relevant planning document in relation to electricity. The first IRP was published in March 2011 (IRP 2010) with an envisioned electricity planning horizon for the years 2010 –

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<sup>123</sup> Section 6(5) of the National Energy Act.

<sup>124</sup> Friends of the Earth, South Africa and Earthlife Africa Jhb Comments by groundwork on the Integrated Energy Plan (IEP) and Integrated Resource Plan (IRP) 2016, Dated 31 March 2017 <<https://cer.org.za/wp-content/uploads/2017/04/IEP-IRP-gW-ELA-Comment-310317.pdf>>.

<sup>125</sup> Ibid.

<sup>126</sup> Black (note 28 above) 5.

2030.<sup>127</sup> The IRP 2010 was subsequently updated and replaced in October 2019.<sup>126</sup> Both IRPs both propose a diverse energy mix to meet the electricity demands of South Africa. The IRP 2019 proposes 39 696 MW to be added to the grid between 2019 and 2030.<sup>128</sup> Because of the grid connection constraints and the low gross domestic product of South Africa, this target is unlikely to be met so new realistic assumptions have to be made regarding the projected capacity until 2030, hence the wait for an updated IRP which is expected to be published before the end of 2023.

The DMRE is the ultimate regulator of energy of all sources in South Africa. They have the power to draft the IRP, the Integrated Energy Plan and other energy associated plans of the country. With the events that demonstrate a lack of coordination and cooperation involving the DMRE, emphasising in particular the failures of the recent REIPPP bid window rounds and the crisis of load shedding, the analysis of the decentred regulation as described in the previous chapter of this paper become more applicable as they advocate that no one actor has all the knowledge or knowhow to conduct the regulatory process. The DMRE is in a position where it is required to realise that participation of non-government actors is necessary for a holistic regulatory regime. In the same light, it is important to note that sometimes it is difficult to get things done and decisions made when everyone has a say, then again, this is the mischief of democracy i.e. that people need to be able to determine their own destinies, including being able to choose their preferred energy sources.

### 3.6. Renewable Energy Determination

To give effect to the procurement processes of the REIPPPP and the implementation of the relevant capacity allocations of the IRP, the minister of the DMRE in consultation NERSA determines new electricity generation capacity requirements in terms of section 34 of the ERA.

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<sup>127</sup> GNR.400 of 6 May 2011: Integrated Resources Plan 2010 – 2030.

<sup>128</sup> GN.1360 of 18 October 2019: Integrated Resources Plan 2019.

The ministerial determinations set out the types of energy sources such electricity must be generated, the applicable percentages and also state who the buyer of the electricity produced should be and how the new generation capacity should be procured. To date, Eskom has been the only purchaser of the power determined.

Section 34(3) of the ERA mandates NERSA to only issue generation licences as per the ministerial determinations in section 34(1). The City of Cape Town challenged the constitutionality of the section 34 determinations.<sup>129</sup> They argued that it is unconstitutional for a municipality to not be able to procure energy in the absence of the ministerial determinations as this infringed on the municipality's constitutional mandate to provide electricity.<sup>128</sup> The crux of the matter was that NERSA was unable to consider a generation licence application if there was no evidence of the applicant having complied with a ministerial determination. The City of Cape town petitioned the court to make a declaration on the unconstitutionality of section 34(3) of the ERA.<sup>130</sup> Unfortunately, the merits of this case were not dealt with as the court held that a dispute between organs of state was to first be dealt with under the Intergovernmental Relations Framework Act 13 of 2005.<sup>131</sup>

Another unfortunate event linked to the delays in decentralisation of the determination regime is that the ERA Bill has not deleted the NERSA requirement to abide by a ministerial determination. In fact, the ERA Bill has further entrenched the ministerial determination regime by adding more responsibility and detail to the determination process.<sup>132</sup> For example, instead of the minister of the DMRE having to consult industry and other parties, the ERA Bill mandates the DMRE minister to consult the finance minister when issuing a determination. This further centralises the

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<sup>129</sup> City of Cape Town v National Energy Regulator of South Africa (51765/17) [2020] ZAGPPHC 800 (11 August 2020) , para 3.

<sup>130</sup> City of Cape Town (note 128 above).

<sup>131</sup> Ibid 29.

<sup>132</sup> Section 34 of the Electricity Regulation Amendment Bill.

determination process which this paper finds to be unnecessary in the electricity planning regime when the country is in desperate need of new generation capacity.

#### 4. Towards a Decentralised Model for Renewable Energy

##### 4.1. Liberalisation of the electricity market; lessons from EEG

It is important to analyse laws from mature renewable energy jurisdictions to see what we can borrow that may be of application in South Africa. There is a gap in the ERA and the ERA Bill as outlined in the previous chapters in relation to the fostering of good regulation applicable to the energy sector broadly. In this section of the paper, we will draw some key points from the EEG<sup>54</sup>. This study does not propose a blind holistic uptake of the EEG as it is cognisant of the different contexts of the South Africa and Germany.

Broadly, section 1(1) of the EEG provides the purpose of the law as to allow ‘energy supply to develop in a sustainable manner in particular in the interest of mitigating climate change and protecting the environment’. Section 1(2) makes it clear that the purpose of the EEG is to increase the proportion of electricity produced from renewable energy in multi-year terms, the section states that, by the year 2025, 40-45% of electricity consumption in Germany must come from renewable sources and by the year 2035, it must increase to 55-60% and by year 2050, it must sit at 80%. Even though South Africa has renewable energy goals set in the IRP, it is not the same as having them embedded in national legislation, this simply makes the trajectory of the country clear, in terms of its renewable energy commitments.

It is important to mention the principles of the EEG as set out in section 2 which state broadly that, renewable energy sources must be integrated into the electricity supply system. Section 2 further indicates that for renewables to be integrated into the electricity market, electricity produced from these sources needs to be sold directly to customers. This is contrasted with the section 34

determinations of the ERA where so far, the determinations issued have only nominated Eskom as the sole buyer of new generation capacity determined and this filters through to the REIPPP where Eskom is the sole customer.

With the EEG, we see that it has liberalised who the buyer of green electrons is and has made the purchase of green electrons directly available to the public. This means the buyers can set the price of the energy, allowing for competition between the generators and thus better commercial outcomes for the direct customers. These are the regulatory outcomes that this paper is advocating for South Africa.

The EEG through section 14 empowers the grid system operators to ‘purchase, transmit and distribute’ electricity produced from renewable energy as a priority and without delay. This section emphasises the urgency and priority of renewable energy to the country. Electricity from renewable

energy is prioritised over electrons that derive from other sources of energy. Besides political will, there is nothing preventing South Africa from implementing such a strategy, the biggest barrier will be having independent grid system operators who will be entrusted with operating grid infrastructure. This does not have to be the South African national grid network, it can be micro grids developed by such independent grid operators. These grid operators can, as Eskom does under REIPPPP, be the purchasers of renewable energy and thus provide the same function as the grid operators under the EEG. This is not far removed as NERSA already provides distribution licences to private entities such as Sasol who operate their own grid infrastructure.<sup>133</sup>

The Eskom Transmission Generation Connection Capacity Assessment undertaken on the

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<sup>133</sup> NERSA Electricity Licences <<https://www.nersa.org.za/electricity-overview/electricity-licences/>>.

transmission network of South Africa (GCCA 2023)<sup>134</sup> illustrates that the Northern Cape has 0MW connection capacity available. This, in simple terms means that new generation capacity in the Northern Cape cannot connect to the national grid network to get to customers for utilisation. Connection capacity is largely unavailable in the cape provinces (these being the Northern Cape, Eastern Cape and Western Cape) as these are hotly contested territory as they have the best renewable energy resources in the country.<sup>135</sup> The cape provinces have been the preferred locations for the development of renewable energy through wind and solar and recently, green hydrogen.

In the REIPPPP bid window 6, the DMRE was not able to award projects in the cape provinces because of the lack of grid connection availability.<sup>136</sup> The bid window 6 RFP called for the procurement of 1000MW for solar and 3200MW for wind.<sup>137</sup> Only 860MW of solar was awarded to 5 projects on 8 December 2022 which projects are situated in the North West and the Free State. The 6<sup>th</sup> preferred bidder was subsequently appointed on 23 March 2023 to reach the 1000MW solar allocation as per the RFP.<sup>138</sup>

Currently, the 3200MW for wind has not been allocated because of the grid constraints.<sup>139</sup> If the 3200MW for wind was allocated, the built of these projects would have halved loadshedding in the next 2 years. Another opportunity loss for the country to ameliorate the energy crisis. The lack of available grid calls for the liberalisation of the transmission market such that the country does not have to wait for the transmission expansion plans to be undertaken by Eskom, which

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<sup>134</sup> Eskom Transmission Generation Connection Capacity Assessment of the 2023 Transmission Network <<https://www.eskom.co.za/eskom-divisions/tx/gcca/>>.

<sup>135</sup> State of Renewable Energy in South Africa (2015) <<https://www.energy.gov.za/files/media/pub/state-of-renewable-energy-in-south-africa.pdf>>, at 50 last accessed 31 March 2023. State of Renewable Energy in South Africa (2015) <<https://www.energy.gov.za/files/media/pub/state-of-renewable-energy-in-south-africa.pdf>> 50.

<sup>136</sup> T Creamer 'Only five solar projects advance to preferred-bidder status following latest renewables round' 8 December 2022, <<https://www.engineeringnews.co.za/article/only-six-solar-projects-advance-to-preferred-bidder-status-following-latest-renewables-round-2022-12-08>>.

<sup>137</sup> Ibid.

<sup>138</sup> DMRE 'Renewable Energy IPPP programme (REIPPPP) bid window 6: Appointment of Additional Preferred Bidder' 6 April 2023, <<https://www.gov.za/speeches/mineral-resources-and-energy-appointment-additional-preferred-bidder-under-renewable-energy>>.

<sup>139</sup> Creamer (note 132 above).

does not have the balance sheet to undertake this massive infrastructure project.<sup>140</sup> This is unfortunately going to be a long wait for South Africa.

A serious rethinking of the transmission model needs to be undertaken such that there are multiple transmission infrastructure operators in the country who will charge connecting fees as with the current Eskom model. These companies will be responsible for carrying out the necessary expansions and operate and maintain the transmission infrastructure. One company, being a state-owned institution with its current challenges (focusing on its balance sheet) cannot possibly be expected to carry out the task of grand infrastructure upgrades which are critical to the country.

This paper finds that the decentralisation of the transmission infrastructure is eminent to take South Africa out of the current energy crisis. The ERA (or new renewable energy specific legislation) can be amended to cater for an independent transmission operator. An RFP can be issued where such companies are selected on a public auction system where the adjudicators include independent persons and all relevant energy stakeholders at large (not only government officials). This can even start on a public private partnership model with a built- own-operate and transfer contract for the duration of at least 20 years as a start. It can then be re-evaluated for efficacy later or even during the implementation period. These private sector led companies can operate under the purview of the National Transmission Company which can regulate them, by only carrying out a regulatory function that involves licencing and monitoring compliance. Germany has 4 large transmission system operators 3 of which possess an almost equal market share.<sup>141</sup> Even under this liberalised regime, the country is known to have one of the most reliable grid networks in the world.<sup>142</sup> Safe to say the model works and could be a possible

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<sup>140</sup> Energy Action Plan (note 13 above).

<sup>141</sup> The German Electricity Grid <<https://www.bmwk.de/Redaktion/EN/Dossier/grids-grid-expansion.html>>last accessed 30 March 2023.

<sup>142</sup> Ibid.

solution for the transmission problems of South Africa.

The proposed solution of dismantling Eskom by separating generation, transmission and distribution is not a silver bullet to solving the energy crisis.<sup>143</sup> This is because, these three proposed entities will ultimately be owned by Eskom or the state, the only difference is that they will be brand new companies and de-risked in a way. This so-called unbundling of Eskom is merely a cosmetic change akin to shifting furnisher around the home, what South Africa needs is a fundamental change and a rethink of the current electricity model.

#### 4.2. Beyond the Electricity Regulation Act

The main issue with the South African energy framework is that it gives too much power to the DMRE. This ministry is responsible for all things energy related without appropriate checks and balances. It is as if the DMRE, to use a sport metaphor, is both the player and referee. This will be more so under the soon to be tabled ERA Bill. The bill is counter-productive from a regulatory standpoint as it introduces more administration, and further empowers, the already over empowered ministry of the DMRE. It is my argument that this kind of power is likely to be abused especially in the hands of politicians. This is not a far-fetched assertion as South Africa has witnessed from the IPP Risk Mitigation Procurement Programme that inappropriate energy sources can be pushed into the South African energy mix as it was the case with Karpowerships (which are subject to litigation).<sup>144</sup>

Even under these seemingly grim circumstances, it is important to acknowledge that the South African government has been trying to ameliorate the shortage of electrons on the South African

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<sup>143</sup> M Nyathi 'NERSA to begin unbundling Eskom' 23 March 2023 <<https://mg.co.za/news/2023-03-23-nersa-to-begin-unbundling-eskom/>>.

<sup>144</sup> S Comrie 'NPA reveals why it declined to prosecute in Karpowership case, but decision raises new questions' <https://www.news24.com/fin24/economy/npa-reveals-why-it-declined-to-prosecute-in-karpowership-case-but-decision-raises-new-questions-20230227>.

grid through various means. The risk mitigation procurement program is one of these efforts as it was intended to procure 1998MW of new generation capacity that was technology agnostic in the year 2020. Unfortunately, as of February 2023, only 150MW of this capacity is under construction.<sup>145</sup> The rest of the projects were yet to reach legal close in March 2023, legal close simply being the process of signing the relevant legal agreements. This risk mitigation procurement program has not yielding the intended results.

President Cyril Ramaphosa yet through another attempt to deal with the energy crisis announced the declaration of the national state of disaster to enable government to deal with the electricity supply constraints.<sup>146</sup> He also announced the appointment of the minister of electricity who would sit in the Presidency and coordinate efforts to take the country out of loadshedding.<sup>147</sup> This ministry of electricity in actual fact does not exist as the regulation of electricity and energy broadly sits with the minister of the DMRE. This is a staggering example of the fragmentation and the silo compartmentalisation of the energy regulation in South Africa. To add to the confusion, the national state of disaster mentioned above has been terminated with immediate effect after the government received legal challenges pertaining its proclamation.<sup>148</sup> There really seems to be policy and regulatory flip flop, accompanied by uncertainty in the energy sector.

South Africa currently requires 6000MW (megawatt) of new generation capacity to end load

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<sup>145</sup> Energy Action Plan (note 13 above).

<sup>146</sup> National State of Disaster, declared in terms of section 27(2) of the Disaster Management Act 57 of 2002. The national state of disaster has subsequently been terminated to avert legal action.  
<<https://www.news24.com/fin24/economy/outa-and-solidarity-say-govt-is-going-to-withdraw-energy-crisis-state-of-disaster-20230405>>.

<sup>147</sup> Dr Kgosientsho Ramokgopa appointed Minister of Electricity in the Presidency 6 March 2023,  
<<https://www.sanews.gov.za/south-africa/dr-kgosientsho-ramokgopa-appointed-minister-electricity-presidency>>.

<sup>148</sup> National State of Disaster, declared in terms of section 27(2) of the Disaster Management Act 57 of 2002. The national state of disaster has subsequently been terminated to avert legal action.  
<<https://www.news24.com/fin24/economy/outa-and-solidarity-say-govt-is-going-to-withdraw-energy-crisis-state-of-disaster-20230405>>.

shedding.<sup>149</sup> This suggests that new generation capacity is needed as a matter of urgency. The average construction lead time for a coal fired power plant is 5 years, whereas the lead times for the construction of a renewable energy facility is 2 years.<sup>150</sup> The levelized cost of energy (being the measure of the average cost of a generation facility to produce 1 kWh (kilo watt hour) of electricity over its lifetime) for renewables out competes coal fired power plants.<sup>151</sup> The evidence above overwhelmingly supports the implementation of renewable energy on all important matrices including job creation.<sup>152</sup>

It is clear that the current centralised regulatory model does not work as it is not yielding the intended results and the country is still far off from ending the energy crisis. Unfortunately or fortunately, ameliorating the energy crisis means creating new generation capacity which needs to connect to the national grid. This crisis has the potential to be a sustainable job creator if responded to correctly.<sup>153</sup> However, it will be difficult to achieve this under the current regulatory dispensation. Fundamental changes need to happen where the market is liberalised akin to the EEG. This is not going to happen through the various cycles of the panel beating of the ERA, legislation specific to renewable energy with liberalised market themes allowing private sector participation is the solution.

## 5. Conclusion

South Africa needs around 6000MW to be added to the grid in order to end load shedding, that is not a lot of new generation capacity.<sup>154</sup> It would only take around 40 projects each for 150MW to end loadshedding. This can be done still under the current status quo, with the prevailing grid

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<sup>149</sup> Energy Action Plan (note 13 above).

<sup>150</sup> EIA Levelized cost of electricity by technology in Africa in the Sustainable Africa Scenario, 2020-2030 <<https://www.iea.org/data-and-statistics/charts/levelised-cost-of-electricity-by-technology-in-africa-in-the-sustainable-africa-scenario-2020-2030>>.

<sup>151</sup> Ibid.

<sup>152</sup> T Bischof-Niemz & T Creamer 'South Africa's Energy Transition, A Road Map to a Decarbonised, Low-cost and Job-rich Future' (2019) 135-140.

<sup>153</sup> Ibid.

<sup>154</sup> Energy Action Plan (note 13 above).

constraints.<sup>155</sup> The fact that we cannot get this right is problematic. Renewable energy having the fastest construction lead times is the pathway to end South Africa's energy woes. The grid constraint challenges are also a blessing in the just transition discourse because now, other provinces of South Africa that do not have great renewable energy resources can now be considered as sites for the construction of projects, and communities can also benefit. This has already begun with the bid window 6 projects which are to be constructed in the North West and Free State. On the regulatory side, this paper concludes that section 34 determinations have no place in our energy legislation and need to be taken out of the ERA. The energy sector needs more active participation of industry, academia, and other stakeholders in undertaking the regulatory function. There is a place for the state, but not for the state to act alone, collective action of all social actors is needed to drive the renewable energy industry forward.

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<sup>155</sup> Energy Action Plan (note 13 above).

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