

Gaps and Opportunities Report

Regulatory Framework to Promote Energy Efficiency in Municipalities

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Table 1: Areas influencing Energy Efficiency where municipalities can exercise their legislative powers

Acronyms

DEA	-	Department of Environmental Affairs
DTI	-	Department of Trade and Industry
EEDSM	-	Energy Efficiency Demand Side Management
ERA	-	Electricity Regulations Act
FLISP	-	Financial Linked Individual Subsidy Program
IDP	-	Integrated Development Plans
EE	-	Energy Efficiency
GBCSA	-	Green Building Council of South Africa
IRFA	-	Intergovernmental Relations Framework Act
IPP	-	Independent Power Producer
MFMA	-	Local Government Municipal Finance Management Act
NCCRP	-	National Climate Change Response White Paper of 2011
NEESAP	-	National Energy Efficiency Strategy Action Plan
NERSA	-	National Energy Regulator of South Africa
RDP	-	Reconstruction and Development Programme
SABS	-	South African Bureau of Standards
SALGA	-	South African Local Government Association
SDF	-	Spatial Development Framework
SWH	-	Solar Water Heater

Acknowledgements

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Executive Summary

This is the fourth part of a project commissioned by the South African Cities Network (SACN) to determine appropriate regulatory framework to promote energy efficiency (EE) in municipalities. This report identifies gaps and opportunities as well as a clear regulatory agenda on energy efficiency, encompassing a number of action areas for local government and other stakeholders.

By-laws exist to ensure that certain kinds of behaviour and acts are encouraged or discouraged through sanctions. They should be introduced when there are no already existing legal and administrative mechanisms to implement policy. As the case studies have shown, many EE matters are handled fairly substantively in the National Building Regulations for Energy Efficiency SANS10400-XA (Part-XA). A municipality that wants to legislate must identify a need over and above the provisions of Part-XA, both in terms of content as well as mechanisms of implementation. Further, the municipality must be willing to implement any sanctions introduced through a by-law.

A number of important observations have also been made with regard to current by-laws. Firstly, because EE issues are cross cutting and affect a wide range of sectorial departments, it is therefore critical that a by-law integrates and adds value to these other areas as well. Secondly, the municipality must take leadership in applying the provisions of the by-law in its own new as well as old infrastructure, the latter, which can be progressively retrofitted. Thirdly, given the greater role to be played by large municipalities in implementing state subsidised housing programmes, none of the case studies has shown that relatively simple and cheap options can be used to implement energy efficiency resolving the concern of cost.

Another major finding is that the legislative environment has often been characterised by poor intergovernmental coordination. This has resulted in laws at a national level that have been enacted but proved very difficult to implement at local government level. Better coordination through platforms of intergovernmental cooperation incorporating actors at all levels of government is critical. Importantly today, the legacy of this less than optimum cooperation needs to be dealt with. We currently stand with various laws that need major amendments, clarification around areas of uncertainty, ambiguity, poor understanding and areas of potential intergovernmental conflict. It cannot be overemphasised that any further legislation at national level should at the very minimum have sufficient consultation with all stakeholders, particular local government, which is often required to implement.

Beyond inappropriate legislation, the case study has shown that in many ways, municipalities can, and are using the current legislative framework to accomplish many EE related projects and programmes. Indeed, there are numerous other points of legislative leverage using powers given under current laws. This includes among others the legislative platform created by Part-XA; the considerable municipal licensing powers, as well as entrenchment of plans in municipal documents with legal status such as Integrated Development Plans (IDPs), Spatial Development Framework (SDFs) and Budgets.

Energy efficiency is a complex arena in development, relatively new, highly technical and often lacking in well-established knowledge and technology. Training and support to implement the various legislation developed has happened but there is need to continue even further. Also, a clear need for research and development in

EE in South Africa was identified in order to adequately implement current legislation. This relative novelty of the industry also means that legislation is often not necessarily well understood by the general public affected by it. Here, local government can play a critical role in supporting processes and forums that raise awareness. Finally, regulation requires data to motivate for its introduction, measure its efficacy and highlight any future changes. Currently as it stands, there is a critical data gap in the industry, an area where local government can and should take the lead.

Another important gap that has emerged is a 'peer practice learning gap'. Many challenges in implementing legislation have been resolved through innovative ways, among the various cities, and this practice should be shared. The regulatory landscape is also replete with legal opinions on how to deal with challenging regulatory questions, and these often have relevance outside the city commissioning them. New by-laws have recently been enacted around green buildings, and their practice would make valuable material for sharing. Technology in the industry is ever evolving, and these rapid developments require peer interaction to navigate what can often be very confusing developments in a municipal environment that is often not conducive to those willing to experiment.

A common challenge at local government level is one of the unfunded mandates. The lack of legislative implementation does not always boil down to lack of money. For instance, one factor hindering energy efficiency is poor maintenance of current infrastructure. This, rather than a problem of finances, is an issue of under-prioritisation of recurrent expenditure on maintenance, to the benefit of growing the asset base. Nevertheless, this work has clearly shown that in fact in many instances, implementation of EE measures has been hampered by a lack of financial resources to accompany such action. This is not helped by the lack of explicit mandates for energy efficiency for local government, which often means funding is by no means guaranteed, inhibiting municipal initiative.

Finally, there are important contextual factors to bear in mind. In many ways, these are key 'contextual gaps' in the current energy efficiency conversations. One is the persisting ambiguity around municipal mandates in EE, which creates inertia in action among them. This is often closely linked to the lack of recognition of the important role of local government in energy efficiency measures. Finally, there is also the real and perceived notion that many EE measures undermine municipal revenue streams, especially from electricity tariffs. Concrete research work, through a Regulatory Impact Assessment or a Cost Benefit Analysis needs to be done on how much this truly affects municipalities, especially in the long term, and importantly how it can be successfully dealt with.

1. Background

The SACN commissioned a project to create a Regulatory Framework to Promote Energy Efficiency in Municipalities. The Gaps and Opportunities report describes such gaps as well as potential areas of regulatory intervention at municipal level to ensure uptake of EE measures. The document emerges from three previous reports, a **Regulatory and Literature Overview** and two **Case Study Reports - Cape Town and Tshwane**. Aside from identifying regulatory gaps and opportunities, it frames a broader regulatory agenda around EE that should be pursued by municipalities.

1.1 Important contextual matters

In order to better understand why there are regulatory gaps, and contextualise the usefulness of any actions geared towards resolving them, some important contextual issues are important to note.

1.1.1 Lack of explicit mandates for municipalities in EE

The Constitution, specific national legislation, legal opinions and communications between local and national government imply that municipalities have the mandate to use their regulatory or law making powers (the enactment of by-laws) to regulate energy efficiency in the built environment. This is not an explicit mandate. EE and other related measures often derive from the municipalities other powers and functions.

Table 1: Areas influencing Energy Efficiency where municipalities can exercise their legislative powers

Schedule 4B	Schedule 5B
Air pollution	Billboards
Building regulations	Cemeteries funeral parlours
Electricity and gas reticulation	Local sport facilities
Municipal Airports	Markets
Municipal planning	Municipal abattoirs
Municipal public transport	Municipal parks and recreation
Municipal public works	Municipal roads
Harbours	Public places
Storm water management	Street lighting
Water and sanitation supply systems	Traffic and parking

Despite this mandate, municipalities have, by and large, not made use of these powers. Furthermore, in circumstances where municipalities have attempted to regulate an issue related to energy efficiency¹, the processes of developing by-laws has been stifled by institutional difficulties² and a lack of financial resources to implement. This absence of an explicit (rather than implied) municipal energy efficiency mandate within national regulatory frameworks is also partly responsible for the hindrance of municipal regulatory making processes. While not all municipalities can handle additional mandates given their capacity constraints, there is a case for many of the larger cities that have already taken considerable proactive action institutionalising matters of EE to be provided greater legislative and fiscal authority under EE. Currently, this ambiguity often presents itself as municipal inaction.

1.1.2 Dependence on services revenue

While there have been numerous EE programmes and projects since the onset of the electricity supply crisis in 2008 to date, there is a sense among stakeholders and municipal-level actors that municipalities are not exercising their full mandate and responsibility in EE-transition for cities. In particular, municipal-level regulations and by-laws in support of EE-response and behaviour-change have not evolved sufficiently. An important factor mentioned is the dependence of municipalities on electricity sales for revenue. This can potentially hinder municipal support for energy efficiency interventions. One important gap identified in this work is research and action on options for decoupling electricity sales from revenue. It has been suggested in cities that such a programme should be incorporated into the National Energy Efficiency Strategy Action Plan (NEESAP).

1.1.3 Inadequate recognition of the role of cities and local government

According to the State of Energy Report 2011, cities are critical centres of energy consumption (accounting for up to 50% of national consumption) with residential (13%) and commercial buildings as well as industries (20%) and transport (56%) as the leading consumption sectors. This is in comparison to national averages of 24% in transport, 40% in industry, 18% in residential and six% in commercial sectors.³

National government's overall policy around energy efficiency is detailed in the NEESAP⁴, which sets a national target for energy efficiency improvement of 12% by 2015. However, it is felt by many in cities that the role of local government in assisting with the achievement of EE targets has been largely neglected in the National Strategy and Action Plan, despite the fact that its contribution is key. The regulation of commercial buildings, municipal operations (particularly municipal building stock), the residential sector and transport efficiency (particularly around spatial planning and public transport) all fall within the domain of local government. However, the Strategy is silent on the details of local government's role and mandate in these areas.¹

¹ For example, the City of Cape Town's attempt at promulgating a Solar Water Heater By-Law

² See Case Study for more detail.

³ Page 48-50.

⁴ Energy Efficiency Strategy and Action Plan (2005, updated 2013)

2. Defining Regulatory Gaps and Opportunities

Emerging from the report, by-laws are not always necessary in implementing EE. Municipalities can make progress in institutionalising and facilitating EE, using plans, strategies, campaigns, programmes and projects, and not necessarily through by-laws.⁵

Yet by-laws can be important and have been used in certain instances. These practices of by-law formulation that have emerged across the country show that they are primarily used in two areas:

- Firstly, by-laws are used to encourage green buildings development, as was recently done by the City of Tshwane (CoT). Green buildings encompass a diverse range of issues including more efficient heating and lighting, regulation of water use through fittings such as taps and showers, rain water harvesting, energy efficient swimming pools and so on. It also includes, in the case of CoT, developing buildings that are more spatially efficient, such as those located within easy reach of public utilities. The city enacted this law to ensure its Tshwane Green Building Development Policy is enforced. Practice on this approach has not sufficiently emerged, and the jury is still out on the utility of such by-laws to enforce EE related policy. However, a number of lessons have emerged on the by-law formulation process which are reflected in the case study of the city's experience.
- Secondly, the other area of by-law formulation is related to ensuring commercial and residential development incorporates solar water heaters. The creation of such by-laws was seriously considered by many cities and towns, and even enacted by one, Oudtshoorn. It has however, now become unnecessary given the National Building Regulations for Energy Efficiency SANS 10400-XA (Part-XA).

There are other areas identified as having potential for by-laws for EE, and have been considered by municipalities:

- Energy efficient water heater insurance by-law: such a by-law would require insurance companies, operating within municipal boundaries, to replace burst or broken geysers that are insured with an energy efficient option (solar water heater or heat pump). This would not replicate Part-XA as it would relate to existing buildings (retrofit) and could provide a means to gradually replace existing electric geyser stock with efficient alternatives.
- EE by-law: this would relate to additional efficiency measures for new build in order to complement Part-XA, for issues such as the installation of smart meters.
- Small scale embedded generation by-law: such a by-law could require all new developments to have a portion of their total theoretical energy consumption supplied by renewable energy.

⁵ Furthermore, municipalities regularly lobby and communicate with national government on increasing the role of local government in energy efficiency. However, this is limited to engagement with national regulatory and policy processes rather than using their own regulatory capacity.

- Energy efficient appliance by-law: such a by-law could require large retailers of electronic appliances to meet defined efficiency standards and labelling.
- By-laws for existing building stock to complement Part -XA concern on new buildings undergoing municipal plan approvals. Internationally, a common requirement is for energy-consumption performance certificates for all buildings to be mandatory, and to achieve a certain EE-performance benchmark certification for transfer clearance or such other stages where enforcement can be effected.

These are a few examples given by municipal officials of where municipal regulatory powers can be used to promote energy efficiency in the built environment.

The overall project set out to; firstly, identify regulatory gaps that cause poor uptake of EE; and secondly, as far as possible, identify a regulatory response in which the legislative powers of municipalities are developed and exploited to plug these gaps. It is clear however, that while there are indeed many regulatory gaps that face municipalities, the responses needed are much more complex and go beyond their need to simply enact more regulations, in the form of by-laws. This was adequately demonstrated in the regulatory review and the case studies. This larger and wider regulatory agenda is presented in the sections below.

3. A Municipal Regulatory Agenda on EE: Gaps and Opportunities

The project has identified a clear regulatory agenda for municipalities with regard to EE. This is presented in Annex 1 at the end of the report and in greater detail in the Regulatory and Literature Overview Report as well as the City of Tshwane and City of Cape Town Case Studies.

3.1 Is a by-law a necessary method to entrench EE policy?

There is no easy answer to this question, and it will largely depend on context. There are a number of broad principles emerging from the CoT and to a lesser extent the City of Cape Town Case Studies.

3.1.1 There must be a legal mandate to create the by-law

There is currently a legal mandate for local government to create by-laws for energy efficiency and green economy issues. The project has explored the areas where such a mandate can be drawn (see Table 1) however, such a mandate is not explicit which often raises legal questions.

3.1.2 The by-law must promote the principles of developmental local government as enshrined in the Constitution

These are:

- Promoting democracy through representative, accountable and participatory governance government.

- Promoting development through sustainable service delivery, social and economic development, and prioritisation of basic needs.
- Promoting a healthy and safe environment.
- Peeping with cooperative governance, and participation with programmes of all spheres of government. There is a clear activity that the by-law seeks to regulate.

Therefore, a by-law must meet all the above legal tests.

3.1.3 A specific need must be identified for a by-law regulation

By-laws exist to ensure that certain kinds of behaviour and acts are encouraged or discouraged through sanctions. Further, they should be introduced when there are no other already existing legal and administrative mechanisms that can be used to implement a policy.

Today, many EE matters are handled fairly substantively in Part-XA, which must now be the starting point for any municipality that wants to legislate in the EE field. Is there a need to regulate over and above the provisions of Part-XA? Is there a gap in Part-XA that needs to be filled by a by-law? In the CoT, the by-law process began before Part-XA was in force, which has resulted in significant overlap and duplication. In the case of the CoCT a planned solar water heater by-law was shelved once the scope and impacts of Part-XA became apparent.

There are other secondary gains to be made by creating by-laws, often linked to the law-making process. These secondary gains, important as they can be, cannot substitute a primary reason to legislate.

- The process provides an important opportunity for reflection, capacity building and internal consensus formulation around EE.
- By-laws can give prominence to EE issues.
- Policy can obtain greater buy-in when it is known to have been made into law. In the case of the City of Tshwane, there was a degree of internal comfort to the fact that the policy is 'entrenched in a by-law' and is enforceable. This sense of having the "law behind them" is an intangible but important element.

These goals are secondary however, to a clear need for legislation being identified.

3.1.4 There must be willingness and ability to implement the by-law

In the CoT, it became clear that the enforcement mechanisms in the by-law will not be used, at least not in the short term. Instead, the incentives within the policy are considered more important. These incentives could have been implemented using policy and administrative procedures, and not necessarily the by-law. This suggests that the city need not necessarily have pursued the by-law option.

3.1.5 There must be sufficient resources to implement the by-law

The by-law must be accompanied by financial and human resources for implementation, which presupposes that there must have been a realistic costing of the proposed implementation strategy as well as the realistic establishment of an appropriately skilled personnel structure.

3.1.6 Proper inter-departmental consultation is key

EE issues are cross cutting and affect a wide range of sectoral departments, it is critical that the by-law adds value to all these other areas as well. As the CoT Case Study showed, by-laws can be the cause of poor alignment of city department efforts.

3.1.7 The municipality should lead by example with its own infrastructure

The municipality must lead by example and use its own policies and by-laws, where necessary, to retrofit old infrastructure and guide development of new ones.

3.2 Using intergovernmental forums to lobby regulatory reform

The Intergovernmental Relations Framework Act provides for the substantive legislative framework for cooperative governance as required under section 41(2) of the Constitution. It provides for the creation of a series of intergovernmental relations structures and institutions to promote and facilitate intergovernmental cooperation, as well as providing mechanisms for dispute resolution.

In the case of EE the most important players in such forums would include:

- Department of Energy (DoE)
- Department of Environmental Affairs
- Department of Trade and Industry (DTI)
- National Treasury
- The National Energy Regulator of South Africa (NERSA)
- South African Local Government Association (SALGA)
- Local governments
- SACN

The constitution of the forum would largely be driven by the legislative agenda in question, which would revolve around the following:

Pushing for legislative changes

A significant problem that has emerged with regard to implementation of current legislation is poor initial consultation on its enactment by national government. The legislation has consequently proved difficult to implement at a local level, and requires significant changes if it is to be implemented effectively. For example, the Electricity Regulations for Compulsory Norms and Standards for Reticulation Services (GN R773, 18 July 2008, 'ERA Norms and Standards'), in terms of the Electricity Regulations Act, 4 of 2006, have given rise to numerous challenges linked to its implementation. An agenda for consultation will have to include major and minor amendments to and even, where necessary, repeal of inappropriate laws and unworkable laws. However, importantly, the outputs of the consultation process will also guide the creation of appropriate future legislation.

While well intended, the ERA Norms and Standards were poorly conceptualised and hurriedly enacted, and have thus not been implemented by municipalities. Collaboration with DTI, DEA, NERSA and the South Africa Bureau of Standards (SABS) is needed to do a number of things with regard to the law including:

- Provide for reasonable implementation times including considering the differentiated capacity of various municipalities.
- Revise the prescriptions with regard to the application of ripple control measures at municipal level, which conflicts with their own ability to determine this.

Clarification of laws and regulations

Some important areas of legal uncertainty, ambiguity and poor understanding are identified for clarification, including:

- Applicability of Part-XA to extensions and renovations to buildings;
- Requirements for licencing for small scale embedded generators, under the Electricity Regulations on New Generation Capacity;
- Ability of cities to bid for national Renewable Energy Independent Power Producer Programme, under the Electricity Regulations on New Generation Capacity (see City of Cape Town Case Study for details);
- Ability of cities to purchase power from Independent Power Producers (IPPs), in terms of ERA and whether the purchase price should be at the 'least possible cost', that is the Eskom blended tariff, as provided by legislation (see City of Cape Town Case Study for details); and
- Whether the MFMA restricts the installation of ceilings in low-cost housing, as public expenditure on private property.

One key role of the Local Government Intergovernmental Relationships Framework Act is to resolve disputes between various organs and spheres of government and uphold the Constitutional requirement that they avoid legal proceedings against each other. An important area of engagement in relation to this, and that is identified in the City of Cape Town Case Study is dealing with the question of NERSA's tariff setting oversight over municipalities, particularly large cities, under the National Energy Regulator Act vis-à-vis the cities' own powers under the Municipal Systems Act.

3.3 Support to municipalities by national government

3.3.1. Training

Experience has shown in many ways that municipalities are not prepared for the roles and responsibilities of EE regulations in terms of knowledge, technical skills, number of personnel and physical infrastructure, although there are some exceptions. This is not helped by the lack of explicit EE mandates for municipalities, which makes it difficult for municipalities to commit dedicated resources in this field. Inevitably, the challenge of reaching out to other actors for awareness and behaviour change is unlikely to be prioritised until adequate capacity has been established.

Municipal officials are now required to implement fairly complex legislation related to EE. This includes, for example, calculations of R-value and fenestration for the purposes of Part-XA. The need for constant training in this area has been identified by the project. This is currently being conducted by various organisations such as South African Institute for Architectural Technologists, South African Council for the Architectural Profession and the Gauteng Institute for Architecture. National support is also important in this regard.

3.3.2 Research and development

Support also revolves around backing up research and development. Identified areas include developing local standards and open protocols for smart meters and the development of industry software packages for applying various aspects of Part-XA. This is DTI legislation, and it will be the implementing department for this in collaboration with other stakeholders.

3.4 Lobbying for fiscal transfers and support

Undoubtedly implementing EE at a local level has cost implications, which in many instances need national fiscal support. Often, municipalities argue the case of unfunded mandates. Consequently, municipal response to policies and regulations at national level will continue to be lacklustre if complementary funding and capacity-building are not directed to align with such mandates. This is in acknowledgement of the Energy Efficiency Demand Side Management (EEDSM) fund described below. Lobbying for more of this will involve engagement with Treasury as well as national and provincial implementing agents in the following areas:

3.4.1 ERA Norms and Standards

A number of provisions of ERA Norms and Standards are difficult to implement because of the considerable financial cost they place on municipalities. In as far as implementation of the regulations is agreed upon across stakeholders at national and provincial level including the provision of reasonable timelines, then fiscal transfers to support this may be necessary. This support would include that related to smart meters,⁶ identified in the Cape Town case study as a significant financial challenge.

3.4.2 Certainty in annual allocation of EEDSM

A challenge of EEDSM application has been the unpredictable allocation of funds annually which makes forward planning difficult; as well as alignment of its focus areas with municipal priorities. This is an important area for fiscal lobbying by cities.

3.4.3 Fiscal effects of small scale embedded generators

It is expected that the largest uptake of small scale embedded generators will come from mid-high end electricity users, as they can afford the upfront capital costs and are motivated to install such systems due to rising electricity tariffs (for details see the Cape Town case study). As mid-high electricity consumers account

⁶ This is smart meter rollout for buildings that are not municipally owned.

for over 55% of revenue from electricity sales in some cities, this will significantly affect revenues and the capacity to subsidise low-end users. In this regard, the Standard Conditions for Small Scale Embedded Generation was not accompanied by fiscal transfers around the mandates it created.

3.4.4 Gap housing

The subsidy quantum for the Reconstruction and Development Programme (RDP) housing has been increased to deal with among other things, the application of EE measures related to Part-XA in developing the houses. More needs to be done at a national level to make this known, as many municipal officials were not aware of this fact. It is also not known in practice whether this new quantum adequately meets these costs. An important overlooked segment of the residential housing market is the 'gap' housing market, which is generally considered to be housing for those earning an income of between R3,500 - R15,000. An important aspect of this market is the thin supply of houses priced within reach (around R 350,000 and less). There is a subsidy provided, the 'FLISP'⁷, deducted from the cost of the house, and applied on a sliding scale, with the lowest earners within this segment provided about R 87,000. Implementing this subsidy has been a challenge, limited by poor uptake⁸ and limited affordability created by the subsidy to these lower income earners. Application of Part-XA and any by-laws has the potential to further decrease this affordability, increasing the cost of providing houses to a highly price sensitive market segment. While more research needs to be done to get a definite understanding of the effects of the subsidy, an important option is supplementing the subsidy for the EE enhancements, as was done to 'RDP' houses.

3.5 Regulatory opportunities within existing laws

There are numerous existing regulatory platforms that can be leveraged by municipalities to incentivise EE.

- Part-XA has been identified by municipal officials as generally good legislation that can likewise be further used to incentivise EE. For instance, it can be used as the basis of a smart meter by-law.
- Municipalities have licensing powers for various activities within their areas. They can leverage off these to ensure EE in the activities of the licensee. One example of this is licensing under the National Gas Act for gas providers.

3.6 Raising public awareness on legislation

The complexity of legislation relating to EE has often been accompanied by a lack of sufficient and correct information on how the legislation works. The Tshwane Green Building By-Law and Part-XA typifies this challenge, where many misconceptions and even a simple lack of knowledge among members of the public

⁷ The Financial Linked individual Subsidy Program Subsidy, administered by the National Housing Finance Corporation, has however historically not yielded many beneficiaries.

⁸ For example, the beneficiary still needs to qualify for a mortgage to access the FLISP.

presents a problem.⁹ The municipality can play an important role in raising public awareness on the correct application of the law and its implications. Other legislation is the energy efficiency tax incentive under the Income Tax Act (12L). Here, the municipality may pilot the use of these incentives in their own buildings for illustration, and initiate and support forums that engage with business where awareness on the legislation is raised.

3.7 Disseminating practice and research

Many regulatory questions remain in relation to the achievement of EE. A useful research and best practice agenda has emerged from the case studies and could form the basis for convening platforms for knowledge dissemination and generation as well as commissioning research. Issues that this agenda could build on include:

- The practice on the use of Green Building by-laws to enforce EE policy. Of particular interest will be how the by-law incentives have worked (for example fast track application procedures, discounts on application fees and development charges etc.) and how much uptake there is related to these EE measures. Also, the fate of the provisions aimed at incentivising more efficient spatial development such as non-motorised transport and mixed land uses would also be of interest, given the considerable resistance they have faced internally.
- The use of Part-XA and the Tshwane Green Building Development By-Law in RDP houses, the impacts on household health and how appropriate the increased housing subsidy quantum is.
- Innovation and best practice in time use tariffs, especially to minimise cash flow difficulties.
- The use of ripple control technologies.
- Tariffing, including implementation of free basic electricity.

Important areas of knowledge dissemination are: public finance legislation, showcasing innovation and alternative methods of interpretation of perceived restrictions and hurdles in implementing EE projects. This is especially important because these laws are considered particularly by procurement officials as an impediment to the implementation of EE contracts. This would dwell on the following:

- How to interpret and get around MFMA Section 33 restrictions for municipalities to procure for long term EE projects. According to many, this is a perceived restriction caused by inherent conservativeness among procurement officers in dealing with EE contracts.
- The practice of guaranteed savings in EE contracting, which allows for the use of EE savings to motivate for future long term EE investments.

Partnerships to disseminate this knowledge and practice should be with stakeholders such as Sustainable Energy Africa, SACN, ICLEI, Green Building Council of South Africa (GBCSA) and SALGA.

⁹ See case study.

3.8 Greater institutionalisation of EE through legislation

The Municipal Systems Act provides a framework for building in Key Performance Indicators (KPIs) for performance management for senior municipal managers. Together with the institutionalisation of EE within municipalities, through the creation of dedicated EE offices (which is already happening in the larger cities), this is a legislative opportunity to entrench EE through the KPIs of senior municipal managers.

3.9 Data collection

Based on the well understood principle – ‘you cannot manage that which you cannot measure’, it is important for municipalities to act with greater knowledge. Almost all reports on EE and renewable energy studies in South Africa decry the data vacuum. There is therefore a need for systematic integration and consolidation of data capturing as well as for standardised recording and reporting of data. Continued dependence on estimates creates ongoing scepticism and ambivalence which tends to discourage, rather than inspire, most of the relevant actors. With the looming roll-out of the National Climate Change Response White Paper of 2011 (NCCRP) policy and related regulatory framework, municipalities are likely to find themselves overwhelmed with yet another mandatory monitoring, reporting and verification responsibility with which they will struggle to comply with. Further, municipalities will need to regulate and guide other city actors on the data needed and how it will be collected and packaged.

Municipalities should therefore lead by both capturing and reporting data as well as archiving for ready public access to ensure accurate and up to date monitoring and evaluations. There is supporting legislation for the collection and provision of data under the National Energy Act. Collaboration with national departments and statutory bodies such as the South African Energy Development Institute, which has the responsibility to certify energy savings under Regulations 12L for Tax Allowance to incentivise EE or voluntary bodies such as the Green Building Council can be prioritised. Data is also critical to applying various technological options for EE. For example, data on consumer usage of electricity is necessary to support the use of time use tariffs.

3.10 Better maintenance of infrastructure

The greater part of capital budgets over the past 12 years has been directed to extending services to the poorer and unserved areas. Today, renewal and growth needs have assumed equal importance, as without asset renewal, current revenue streams will not be assured and depletion of service potential follows. The electricity sector epitomises this problem. According to recent reports, on average 18% of the electricity that South African municipalities bought from Eskom in FY 2013 was lost and never reached paying customers and ‘it is clear that low spending on repairs and maintenance (are) often the root cause behind technical losses’.¹⁰ According to SACN, the legacy of under expenditure means that budget allocations will need to

¹⁰ Moneyweb Today Eskom customers fork out for huge electricity losses 27 June 2014
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increase by 23% over a five-year period from 2013, taking into consideration growth, service extensions and city maintenance needs. This is many times what is being currently spent.

4. Conclusion

In conclusion, a number of issues have emerged. Firstly, the regulatory framework certainly presents challenges in implementing EE at a municipal level. The most important of these challenges is the fact that legislation is often inappropriate to drive EE at local government level. The question is much less a lack of regulation than it is one of whether or not the legislation in place is fit for purpose. There are many issues that need to be pursued to ensure current regulations function optimally. These have been identified in the recommendations below.

There are important contextual issues that influence not only the introduction of legislation but also whether these laws are implemented. Because municipalities do not have explicit mandates on EE and also because larger ones are heavily reliant on services revenues, which EE is deemed to curb, often, there is no incentive to introduce and implement such legislation. Finally, local government is often not recognised as being at the centre of EE implementation at a national policy level. This can partly explain many of the legislative and fiscal challenges it faces.

5. Recommendations

There is a regulatory agenda emerging for municipalities with regard to energy efficiency. It includes by-law formulation, if certain criteria are met.

The by-laws must meet the constitutionally enshrined principles of promoting democracy through representative, accountable and participatory governance; promote development through sustainable service delivery, social and economic development, and prioritisation of basic needs; promote a healthy and safe environment; and uphold the principles of cooperative governance. The by-law must also emerge out of a specific need identified for regulation. There must also be willingness and ability to implement the by-law, and sufficient resources should be prioritised for this. Finally, proper internal inter-departmental consultation is key.

There are other actions to pursue around using intergovernmental forums to push for legislative change and clarification on various national laws and regulations already existing. It also involves greater lobbying for more fiscal transfers to implement some provisions of these laws. While it is not always that a lack of finances prevents implementation of EE, it has emerged from this project that in certain instances, this is in fact the case. Similar to finances, it is not always a lack of laws that impedes effective implementation of EE. In fact often, there is considerable legislation already available for this purpose. One additional recommendation is that local government effectively use these existing laws as well as champion them and raise awareness on them among the public and other stakeholders.

At national government level, greater support is necessary to implement the various laws emerging and enforceable at local government level. This is through training as well as facilitating greater research and development. Local government with its partners should also be at the forefront of data collection critical for useful research as well as monitoring the effectiveness of the laws.

Finally, the SACN and its partners should also continue promoting research, knowledge generation and dissemination around this rapidly unfolding industry.

6. References

SEA.2011. State of Energy in South African Cities 2006. SEA. Cape Town.

Moneyweb. 2014. Today Eskom Customers Fork Out for Huge Electricity Losses. 27 June 2014.

7. Annex 1

This section is a summary of the gaps and opportunities that exist in EE regulatory framework, the existing legislation and the agents responsible for implementations as well as what needs to be done.

Legislation	Area of regulation	Identified gap/opportunity	Action and implementing agent
National Building Regulation Amendment Act (Part XA: Energy usage in buildings)	Building regulations	<p>Generally seen as positive legislation to create EE at a municipal level. It will create energy efficiency and reduced electricity consumption; reduced running costs and improved insulation and heat retention.</p> <p>Some gaps have been identified in relation to:</p> <ul style="list-style-type: none"> • Training of municipal officials as the regulations are complex to implement • A lack of accurate public information on the regulations Broader confusion both among the public as well as municipal officials on the applicability of the regulations in certain instance, including interpretation <p>Opportunity, includes the fact that the regulations are seen by some city officials as a potential platform for even more EE provisions as the practice and acceptability of the regulations grows.</p>	<p>Local government needs to:</p> <ul style="list-style-type: none"> • Provide regulatory exemptions to reduce Part XA associated cost implications in respect of gap housing, or better seek greater quantum of the FLISP subsidy for this purpose. • Improve communication with public and building industry on compliance with Part XA • Municipalities can explore innovation on the use of the regulations for greater EE needs. These can be suggested to the regulation creators. • Local government should lobby national government to provide the following forms of support: <ul style="list-style-type: none"> • Continue training industry and City officials in Part XA compliance • Provide clarity on the applicability of Part XA to certain categories of extensions and renovations • Further refine and simplify R-value and fenestration calculations • Align amendments and specifications with materials available in trade • Provide guidance and support for industry in areas such as; obtaining software packages • Provide suppliers with specifications related to Part XA and provide support to suppliers in adapting supplies
Legislation	Area of regulation	Identified gap/opportunity	Action and implementing agent
Tshwane Green Buildings By-Law	Building regulations	The Tshwane Green Buildings By-Law provides a 'carrot' and 'stick' approach to developers, to incentivise greater green buildings supply from the market. It uses a number of critical municipal levers to ensure this, that is the building approval process including how fast this happens and how much is paid for it, the planning	The practice of the by-law needs to be disseminated in platforms for knowledge generation and dissemination convened by SALGA and the SACN.

			process, including relaxation of some planning requirements, its ability to levy development charges and certification. It also imposes fines for non-compliance for certain mandatory requirements.	
	Enhancements to the national norms and standards for the construction of standalone residential dwellings and engineering services and adjustment of the housing subsidy quantum	Building regulations, particularly for public low cost subsidised housing	The subsidy enhancements have explicitly provided for the applications of 10400-XA to public subsidised low cost housing. This closes a gap around EE in government subsidised housing. Importantly, there is also an increase in the subsidy quantum to match this enhancements.	The practice of using 10400-XA, particularly impacts on households as well as the sufficiency of the quantum of the subsidy to meet the enhancements is an important area of research that can be initiated and disseminated by platforms for knowledge dissemination convened by SALGA and the SACN.
	Solar Water Heater By-Laws	Solar water heaters	While previously the creation of a SWH By-Law was often seen as necessary, the regulations have made this unnecessary.	Local government actions around implementing the regulations are important to ensuring SWH are included in developments. See also areas of action above under section National Building Regulation Amendment Act (Part XA: Energy usage in buildings).
	Electricity Regulations Act 4 of 2006 Electricity regulations for compulsory	Smart meters	This is well intentioned legislation but unfortunately not well conceptualised and hence poorly implemented. This is because municipalities have had problems with its implementation because of: <ul style="list-style-type: none"> • The risk of being locked into proprietary protocols 	Municipalities engage with intergovernmental processes to: <ul style="list-style-type: none"> - Collaborate with DTI, DoE, NERSA, South African Bureau of Standards) to develop local standards and open protocols for smart meters.

	norms and standards for reticulation		<ul style="list-style-type: none"> • Significant financial burden on smart meter roll out, including up-skilling of staff 	
	services GN R773 in GG 31250 of 18 July 2008	Time use tariffs	<p>The regulations again while well intentioned have created regulations that municipalities have struggled to implement within the given time limits. This is because of some important gaps in the legislation:</p> <ul style="list-style-type: none"> • Lack of data and information at a municipal level regarding when medium and low power customers use electricity making modelling difficult • The threat of cash flow difficulties in implementing it, based on the differential tariffing and cost at source 	<p>Municipalities should be prepared to collect more data on their consumers. Outcomes of cost to serve studies¹¹, which are mandatory for municipalities to undertake in terms of a National Energy Regulator directive, can provide information on the actual times customers are using electricity.</p> <p>For this provision to be successfully implemented, national government support for municipalities to develop time of use tariffs aligned to advanced metering infrastructure roll-outs and cost to service studies</p>
		Ripple control	<p>Major gaps in implementing ripple control provisions have been identified:</p> <ul style="list-style-type: none"> • Lack of reliable technologies • Unreasonable timeframes for implementation • Conflict with current ripple control methods of operation, which impinges on the municipalities powers of controlling this function 	<p>Better intergovernmental forums for consultation in processes of legislation going forward are absolutely necessary given the difficulty in implementing the regulations.</p> <p>This intergovernmental process should likewise clarify the requirements for implementation in the regulations.</p>

¹¹ Studies on the cost to municipalities to service different electricity user categories

	Electricity Regulations on New Generation Capacity	Small scale embedded generation	Some lack of clarity on whether small scale embedded generators need a license.	Use of intergovernmental forums to clarify the meaning and import of the regulations. (NERSA and DoE)
	Electricity Regulation Act, Section 34 Electricity Regulations on New Generation Capacity	Purchase of power on a large scale from IPPs	Potential gaps with the declaration of Eskom as the single and exclusive buyer of power from IPPs Some regulatory uncertainties also exist with the ability of cities to bid for national Renewable Energy Independent Power Producer Programme	Much regulatory clarification is necessary. Intergovernmental forums for determination of true legal position and clarification of these is required.
	National 'Electricity basic services support tariff'	Free basic services	How to prevent leakage to higher income earners in the provision of free basic electricity. The guideline requirement for 50 kilowatt hours of Free Basic Electricity to households using less than 150 kilowatt hours per month (some such as CT do it for those using less than 450KWH) has become obsolete because of low consumption among middle and high income earners.	SALGA and SACN create platforms for knowledge dissemination around innovation with regard to targeting of free basic services
	National Energy Regulator Act, Municipal Systems Act and Municipal Finance Management Act	Tariff setting	The tariff setting oversight imposed by NERSA as well as the municipalities own powers to do the same does create gaps with regard to regulatory certainty. According to larger cities, they should have the capacity to set tariffs in line with socio-economic and financial goals whilst complying with national regulations; and balancing private sector, community and local government interests.	Intergovernmental process of clarification of powers and functions is required.

	National Gas Act 48 of 2001	Licensing of operators	The legislation provides significant opportunity during the licensing process to ensure that EE is paramount.	While gas operators are not common in most municipalities, some such as the City of Johannesburg have licensed operators. The licensing procedures enable them to build in EE in the operations of the licensee.
	Income Tax Act, Energy Efficiency Tax Incentive (12L) Also the Eskom Integrated Demand Management Programme	General EE measures for buildings	While municipalities are not directly involved in the implementation of this incentive for commercial buildings, there is opportunity for them to assist in facilitation greater awareness and use of this incentive.	Local government can provide support to the private sector to access tax incentives: <ul style="list-style-type: none"> • Provide support services for commercial building owners and managers to assist them in accessing these incentives • Pilot the use of these offerings for municipal energy efficiency retrofits • Lead by example by promoting the pursuit of ISO 50001 Certification within their own operations • Raise awareness on the regulations
	Division of Revenue Act and Municipal EEDSM Programme	Financing EE measures at municipal level	The most practical gap in the legislation and program is the discretionary nature of annual allocation which makes it difficult to plan.	Lobby national government for the creation of a clear methodology for allocation of EESDM funds through the DORA.
	Municipal Finance Management Act	Procurement of EE services	Section 33 of the Act requires that contracts imposing financial obligations of greater than 3 years. While this in itself is not a problem, institutionally, there is caution and conservativeness around contracts such as these, especially if they are innovative and unusual.	SALGA and SACN create platforms for knowledge dissemination around innovation on how to treat section 33 and how various municipalities are getting around this problem. This to include municipal SCM employees, Treasury and other important stakeholders.
		Ring fencing of benefits from past EE interventions to go	The perceived gap in the legislation is prohibition of EE savings to be spent in future for retrofits for EE. In	SALGA and SACN create platforms for knowledge dissemination with regard to innovations such guaranteed savings contracts, which allow for long term contracting

		into EE	<p>reality, EE savings are small as they benefits are truly long term, and hence unable to finance EE interventions. Innovations such as guaranteed savings contracts.</p>	<p>for EE projects, and the use of tangible savings to motivate future investment in EE.</p>
		Purchase of power at the least possible cost	<p>Significant gap is the regulatory interpretation of the need to purchase power from IPPs at the 'least possible cost', in effect less than the national blended price.</p>	<p>Use of intergovernmental forums to discuss, interpret and determine the true meaning and import of the legislation.</p>
		Accounting standards prohibit public expenditure on private property	<p>A gap in interpretation of the Act specifically with regard to the installation of ceilings in low-income housing, and whether this amounts to expenditure of private money in public property.</p>	<p>SALGA and SACN create platforms for knowledge dissemination to target SCM and other related managers on counter interpretation and innovations around these clauses including commissioned legal opinions.</p>
	Standard Conditions for Small Scale ¹² Embedded Generation	Small scale embedded generation	<p>The conditions set a one-for-one netting tariff, which creates problems with:</p> <ul style="list-style-type: none"> • Tariffing, having significant revenue impacts on the city and is not reflective of the costs of delivery to net metered customers. Without time use tariffing, there is not incentive to ensure that the time of generation and consumption for the generator coincides • Bi-directional meters have no open source communication protocols and there is a risk of getting locked into proprietary protocols • Uncertainty over fiscal transfers to cushion 	<p>The city has overcome the problem through the use of a two way tariff. This experience can be disseminated through platforms of knowledge dissemination.</p> <p>Lobbying national government for greater certainty around fiscal transfers for embedded generation, specifically the Treasury.</p>

¹²Less than 100kWh

			embedded generation in their areas	
	Regulations supporting the National Land Transport Transition Act	Public transport provision	There are provisions providing for non-motorised transport provision including cycling and walking. The main gap has been a lack of regulatory or other incentive to get more uptake of these.	Tshwane, in its recent Green Building By-Law includes incentives around providing for development that is friendly for non-motorised users. The practice on this is yet to be documented, but SALGA and SACN can create platforms for knowledge dissemination around this practice.
	Spatial Planning and Land Use Management Act, Municipal Systems Act (SPLUMA),	Creating an efficient spatial form	Significant regulatory opportunity provided by various legislation to encourage and incentivise densification, compaction, creation of urban edges etc.	Create platforms for knowledge dissemination around the practice, especially with the creation of by-laws under the SPLUMA.
Others	MFMA various budget circulars	Maintenance of infrastructure	One of the biggest challenges with implementation of EE in electricity is technical losses. Low prioritisation and spending on maintenance and repairs of infrastructure is the biggest cause.	Prioritisation of infrastructure maintenance among municipalities is necessary. Increase of maintenance budgets by 23% over five years.
	Local Government Municipal Systems Act 32 of 2000 Local government Municipal Planning and Performance Management Regulations GN R796 GG 22605	Performance regulations for municipal staff	<p>The Systems Act provides a framework for building in KPIs for performance regulation for senior municipal managers. This is a legislative opportunity to entrench EE institutionally.</p> <p>Together with this, there has been the institutionalisation of EE within municipalities, through the creation of EE offices that deal with EE for the municipalities own buildings as well as broader operations. Some examples include Cape Town, Tshwane and Durban.</p>	Municipalities should use the regulatory levers for performance management in the Systems Act to entrench EE in performance management contracts for staff. This should be accompanied by institutionalisation of EE issues, already happening. Processes such as VNAMA serve as useful platforms for practice on this to emerge.

	of 24 August 2001			
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