

WINNING WITH THE LAGGARDS

*Light industrial SME environmental management research
Executive Summary Report*

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Project management



Research partner



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In recognition of your considerable assistance, I hope that this research will make a valuable contribution to light industrial SME environmental management improvement, and landscape scale change towards a brighter future.

Purpose of the research

The primary aim of the Winning with the Laggards research is to identify factors likely to significantly improve environmental outcomes, and the cost effectiveness of light industrial environmental management regulation, particularly amongst the poorest performing micro enterprises. While there are several studies that identify barriers and motivators to SME environmental management (Walker et al, 2008; Studer et al, 2006; Hillary, 2004), research was required to examine the interaction of social factors (i.e. values, beliefs, norms) with identified barriers (i.e. awareness, knowledge, time, skills, information availability and accessibility, customer purchasing patterns, economic and regulatory system, infrastructure) to identify drivers and imposts to environmental management innovation. The intention was to build directly on the existing research by the Swan Canning Clean up Program (Swan River Trust, 2000) and South East Regional Centre for Urban Landcare (Lock and Olman, 2008), and intended to provide a model to operationalise the Guidelines for Industrial Development Phase four: operational occupancy (Perth Region NRM, 2010).

Funding for this research was generously provided by the WA Waste Authority (Strategic Waste Initiative Scheme), the City of Canning, and the WA Department of Water. The research has been undertaken as a PhD study under the supervision of Dr Catherine Baudains in the School of Environmental Science at Murdoch University.

Research questions

This report reflects on the investigation of the following research questions:

1. Can light industrial SME laggards be co-operatively engaged in environmental management to achieve beyond legal compliance outcomes?
 - a. What are the conditions required to stimulate continuous environmental management improvement?
2. What are the costs and benefits of a co-operative approach, and legal prosecution, when attempting to stimulate environmental management improvement amongst SME environmental laggards?
 - a. Under what conditions is it appropriate to use a co-operative approach, or legal prosecution, when attempting to stimulate environmental management improvement amongst SME environmental laggards?

Literature summary

SMEs are very important economically and socially (Gerstenfeld and Roberts, 2000) but they are a disparate group (Hillary, 2004), often unable to recognise environmental hazards and risks (Hitchens et al, 2003), and difficult to reach and communicate with (Condon, 2004). While they can be serious point sources of contamination (West Australian Government, 2001), the sheer numbers of small and incidental SME discharges to the wider environment make their collective effect insidious and particularly serious (Hobbs, 2000). Contamination that results in environmental harm reduces the 'free' Ecosystem Services that nature provides and shifts costs of goods and services from the producer and consumer, to the general public and potentially future generations (Costanza et al, 2007). The situation also represents a false economy where the natural capital of future generations is eroded in order to represent income and wealth generation in the present (Schumacher, 1973). Market conditions and consumer purchasing are powerful drivers for SME operators business decisions, and environmental management by default (Williamson et al, 2006; Hillary, 2004). Regulation of the market to protect societies social and environmental values, must ensure a level competitive playing field where legally compliant business are not at a competitive disadvantage (Gunningham and Sinclair, 2002). The coregulation model for environmental management regulation requires considerable participation from all stakeholders (Gunningham and Sinclair, 2002), but allows for a regulated minimum practice while encouraging the removal of barriers, and innovation adoption for beyond compliance outcomes. It is important to ensure that the promotion of new innovations is not being stifled by the system itself, beyond the control of the individual (Rogers, 2003). Where regulation is returning higher economic, social and environmental outcomes it is likely to be more cost effective (Gunningham and Sinclair, 2002), particularly if it can engage the poorest performers (Lock and Olman, 2008). The suggestion by Gunningham et al (1998) for a two track regulatory system highlights the need to target education interventions appropriately for each of these groups. Rogers' (2003) Diffusions of Innovations theory suggests that targeting of environmental programs could be further divided according to adopter category.

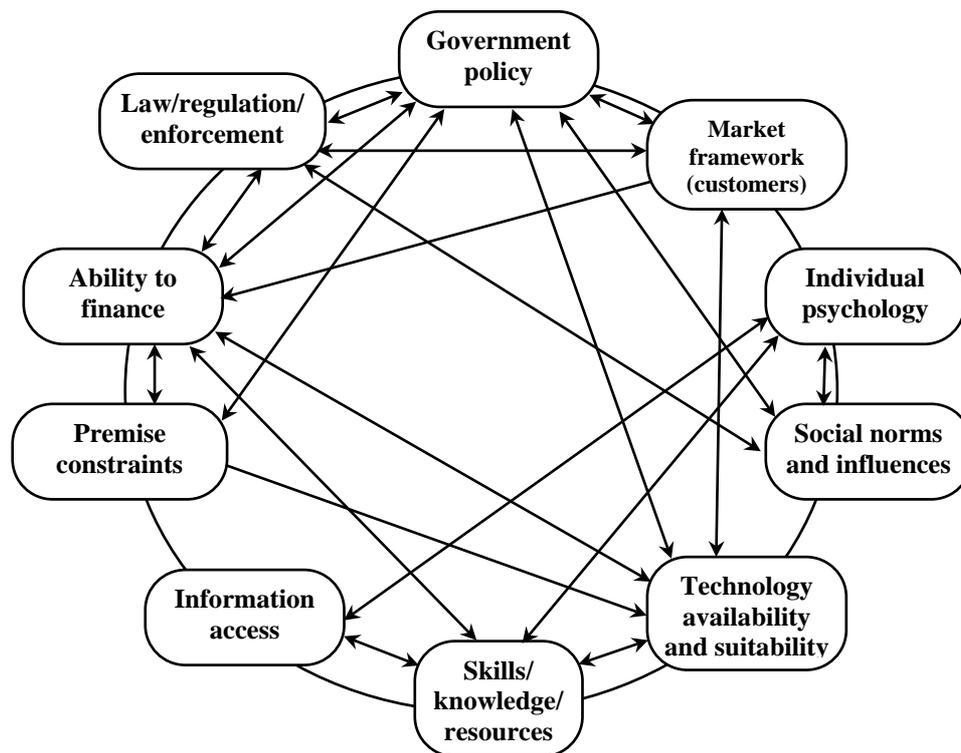
A strategic approach to SME environmental management is much broader than just pollution prevention (Van Berkel, 2004). SMEs are in integral part of a global society trying to grapple with Sustainability and Sustainable Development (Schaper, 2002). A comprehensive approach encourages resource conservation and the reduction and elimination of wastes, toxic materials and emissions, to improve workplace health and safety, productivity and economic development, as well as environmental outcomes. These aims are overlooked when SME environmental management regulation is viewed simply as a local environmental issue, and significant opportunities for societal and economic development are ignored.

Micro enterprises are likely to be dominated by the values of individuals (Brand, 2007) and are inherently different to larger businesses in structure and behaviour (Wills, 2003). As a group SMEs are seeking, and requiring, a personalised and site-specific approach (Lock and Olman, 2008). However, they are usually subject to an

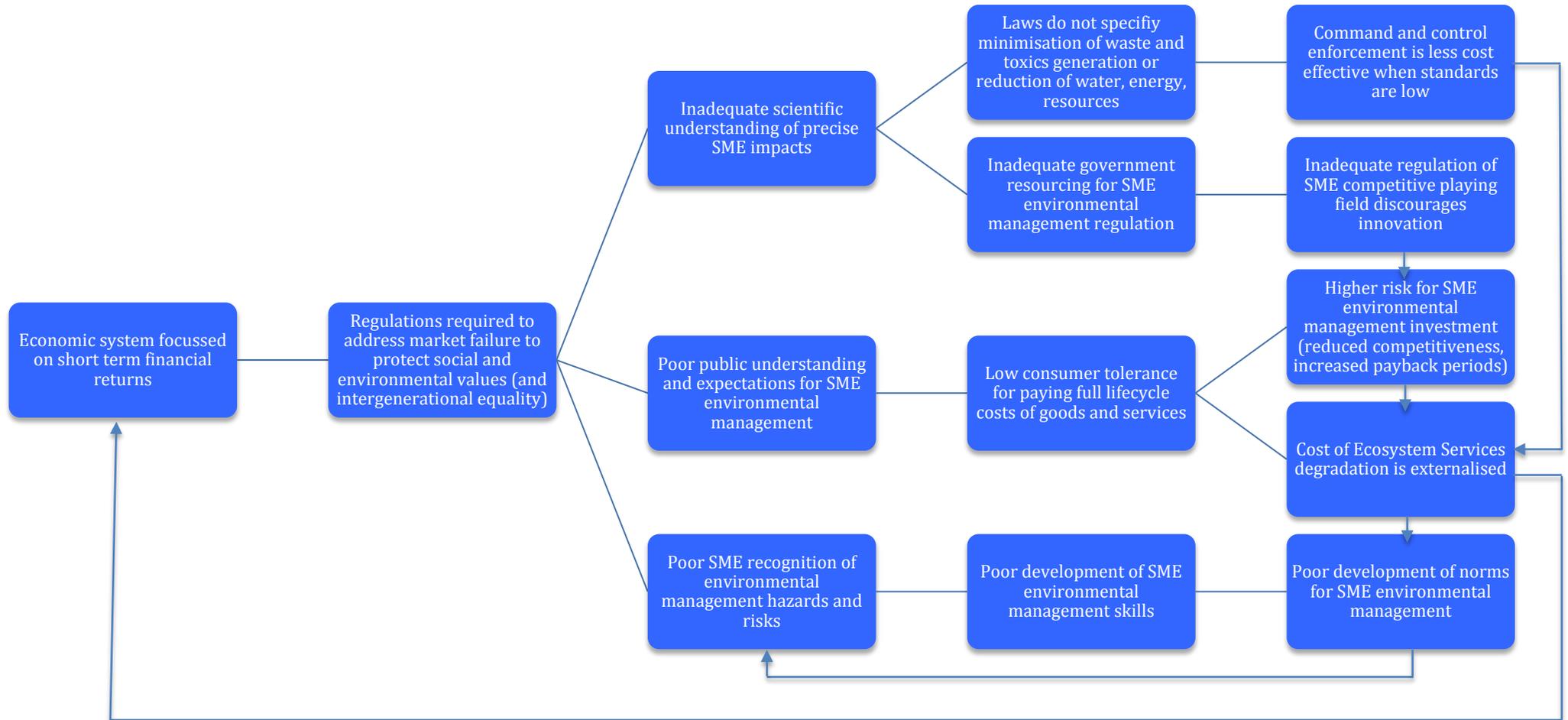
ad hoc policy mix of regulation, market forces and voluntary participation that are often at odds with the signals of the market, consumers and government (Gunningham and Sinclair, 2002). Social influences are crucial in the innovation diffusion process (Rogers, 2003), and understanding how the target audience perceives the innovation (Gibson, 1979), responds to the information provider (Rogers, 2003), and resolves conflicts that arise in personal values (Festinger, 1957) can reduce defensive and resistant behaviours to change (Aronson, 2008). West Australian SMEs numbers are estimated at more than 200,000, of which more than 8600 are involved in manufacturing and a further 166,000 in service industries (Department of Innovation, Industry, Science and Research, 2011). Typical activities of SMEs discussed in this research are mechanical repair, vehicle smash repair, engineering and metal fabrication, metal finishing, machinery hire, chemical manufacture and blending, transport depots, concrete products, landscape supplies and printing and sign writing.

The factors involved in framing light industrial SME operator environmental management decision-making are summarised in Figure 1.

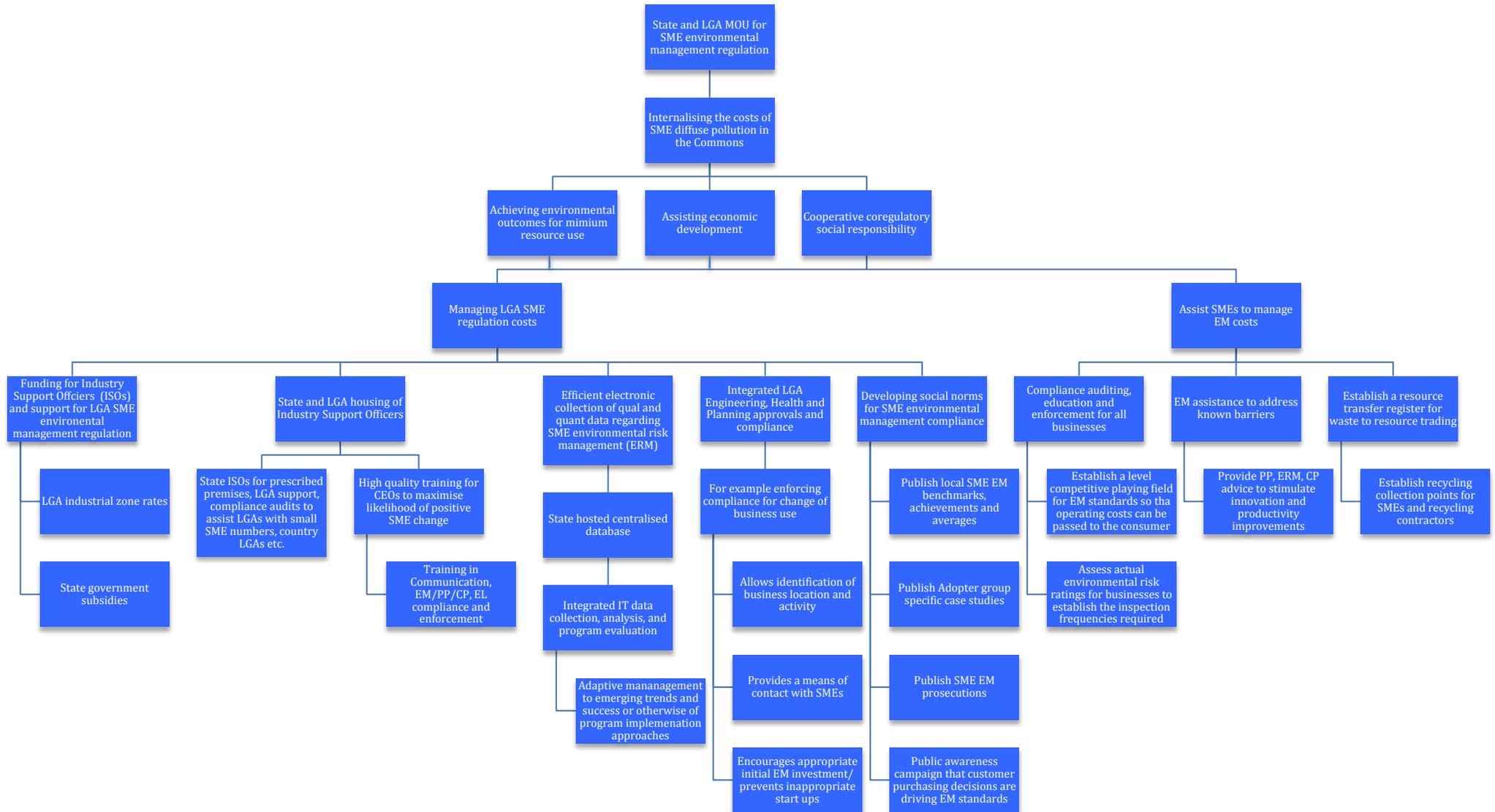
Figure 1 : Flow diagram illustrating the complexity of interactions between factors influencing SME decision making for environmental management.



Challenges to light industrial SME environmental management improvement



Outline of the proposed light industrial SME environmental management approach



Conclusion

SMEs are unquestionably important to the global economy, and woven into the fabric of society (Vives, 2006). Light industrial areas provide employment and immense economic benefits in local economies, but they have a dark side (Swan River Trust, 2000). Left unregulated, a race to the bottom of the barrel mentality can develop where consumers chasing the lowest prices are serviced by businesses prepared to cut costs with inappropriate and illegal waste management practices. Stormwater drains, for example, become waste removal devices, often hidden from customer view, and the true costs of production and supply are, in part, shifted to local wetlands and waterways (Lock and Olman, 2008). The community as a whole pay this price, with local drains and creeks that are unsafe for children and pets due to contamination, and fresh caught local fish, prawns and mussels of dubious quality, as examples. There are also larger issues that degrade ecosystems and effect generations to come; the over exploitation of resources, wasteful use of materials, energy, water, and unnecessarily generated waste that will need to be meticulously managed in landfills for the foreseeable future (Costanza et al, 2007).

Many of our behavioural actions and intentions are governed by norms; what we think others think is acceptable (Ajzen and Fishbein, 1980). Micro enterprises are run by busy people, usually technically proficient, but not always business savvy. Margins can be tight, time is money, and change can be risky. Most people want to 'do the right thing' and use 'common sense' but these principles are governed by norms. If customers don't demand it, suppliers aren't pushing it, and neighbours and associates are not focused on, or practicing, quality environmental management there is no pressure to do likewise (Hillary, 2004).

Regulation not only protects societies social and environmental values in an economic system that prioritises financial returns, but regulation is also crucial for establishing and maintaining the level economic playing field so legally compliant businesses remain competitive (Gunningham and Sinclair, 2002). The SME stakeholders interviewed in this study were, in general, very knowledgeable of the SME environmental management issues and frustrated by the lack of capacity and political will to perform effective regulation. Business operators also accept the need for regulation and describe 'regulatory fairness' as being a level playing field, and a cooperative approach. The personal relationship between a regulating Compliance Education Officer and SME operator, and the networking and sharing of information within and between businesses, is highly influential in the success of the innovation adoption (Rogers, 2003). Policy and regulatory initiatives need to be continuously evaluated, adaptive and tailored to support these critical relationships in a whole of system approach. Good governance is required for a suitable regulatory and market framework, and the development of social norms to internalise environmental protection costs in the supply of goods and services (Gunningham and Sinclair, 2002).

The evidence suggests laggards can be engaged in legally compliant environmental

management where the approach is cooperative, the focus is on capacity building, and the same regulations are enforced with all competitors. The truly recalcitrant business operators exist, but anecdotal evidence from stakeholders suggests they are rare, and the need for prosecution is very infrequent. Cost effective environmental regulation is achieved using the least amount of time and resources to create and maintain the level playing field, whilst encouraging and facilitating self-regulating, continuous improvement that returns the highest environmental outcomes. Where this approach stimulates economic development, returns cost savings or improved sales, it can be expected to embed best.

Large scale Western Australian light industrial SME environmental management research studies have consistently recommended a substantial improvement in government engagement, regulation and assistance provided to light industrial SME businesses (Perth NRM, 2011; Walker et al, 2009; Lock and Olman, 2009; Walker et al, 2007; Swan River Trust, 2000). Without substantial intervention there is no reason to believe the current unacceptable standards will change. The sophisticated use of social science in SME economic development and environmental management planning presents unique opportunities to integrate governance, economics, environmental management, information technology, innovation diffusion, sociology and psychology for high quality environmental management outcomes. Whilst the many systemic barriers to light industrial SME environmental management are currently significant obstacles, there are also significant opportunities to harness the capacity of stakeholders, customers and business operators in a co-regulatory approach for vastly improved economic and environmental outcomes.

Recommendations

1. State and Local governments develop a Memorandum of Understanding to define the roles and responsibilities for regulating light industrial SME environmental management.
2. State and Local governments develop a light industrial SME economic development plan with environmental management as a core objective.
 - a. Based on a co-regulatory cooperative approach addressing systemic barriers and providing assistance to SMEs to achieve legal compliance.
 - b. Establish and maintain a level economic playing field to support legally compliant businesses and encourage investment and innovation in environmental management.
 - c. Take leadership in educating and encouraging consumer (including government) purchasing on goods and services that are internalising the full costs of environmental management.
 - d. Embed the principle of cost effectiveness as achieving stated environmental outcomes by the most efficient means.

- e. Develop an approach that maximises cooperation and minimises conflict for higher environmental outcomes, and encourages Compliance Education Officer safety and enjoyment of their work.
3. State and Local government to develop a funding model for providing individualised site-specific environmental management of all businesses to develop an actual risk based assessment frequency for light industrial SMEs.
4. Develop Compliance Education Officer units in all local governments where possible.
 - a. State government to house a Compliance Education Officer unit to assist small Local governments, particularly in country areas.
5. State government to develop high quality training for Compliance Education Officers and provide regular opportunities for Compliance Education Officers to gather and share innovations and provide support.
 - a. Provide training and guidance in communications skills and basic sociology and psychology to improve the cooperative approach and minimise defensive and dismissive responses from SMEs.
 - b. Provide training and guidance in environmental risk management, pollution prevention and cleaner production skills to provide advice to businesses and stimulate environmental management innovation.
 - c. Provide training and guidance in legislation and enforcement skills.
 - d. Provide training and guidance in the use of information technology for efficient data recording and information sharing.
6. State government to develop and manage a centralised database for light industrial SME audit results for analysis and evaluation of program effectiveness and development of adaptive management responses in collaboration with SME environmental management stakeholders.
 - a. SME stakeholders to develop an electronic audit form and information technology equipment for recording and sharing information at SME premises.
 - b. Compliance Education Officers to become providers and collectors of SME environmental management information. SME operator and SME stakeholders concerns, perceptions and opinions provide valuable insight for program evaluation and adaptive management.
7. Local Government to integrate their approach to light industrial SME approvals and advice (particularly Environmental Health, Engineering, Planning).
8. Local Government to enforce change of business use approvals so that businesses are receiving appropriate start up information regarding environmental management, and a database of the location and intended activities of businesses can be used for risk assessments, and contacting businesses in their local area.

9. State and Local governments to develop a communication and marketing plan for businesses and the general public.
 - a. Communicate the vision for economically vibrant light industrial areas with minimal impact on the local and wider environments
 - b. Encourage the development of social norms for environmental management in business and the community.
 - i. Publicise prosecutions of light industrial SMEs where appropriate.
 - ii. Publicise the importance of establishing and maintaining an economic level playing field for economic and environmental outcomes.
 - iii. Publicise innovation adopter group specific case studies recognising that one size does not fit all in approaches to environmental management.
 - iv. Publicise industry specific SME environmental management achievements and performance averages to encourage businesses to benchmark their activities beyond their own 'common sense'.
 - c. Promote Green Stamp to the community and customers to stimulate green purchasing and demand from businesses for certification.
10. Establish more industry specific environmental management information
 - a. Establish an online one-stop-shop for light industrial SME environmental management information even if it is only used by Industry Support Officers initially.
 - b. Establish an environmental management resource and recycling directory.
 - c. Establish a waste to resource transfer register so that businesses can identify available resources and encourage the reuse of wastes and resources to keep them from landfill where possible.
11. State and Local government develop local recycling drop off points in each light industrial area to cater for small volumes of SME recyclable wastes that are not economical for waste management contractors to collect directly.
 - a. Provide a 240L bin recycling service to all businesses in light industrial areas.
12. State and local government to develop street based Water Sensitive Urban Design plans for light industrial areas to provide more green spaces, manage localised flooding and treat surface waters before they enter local waterways and wetlands.
13. State and Local governments to develop water quality monitoring plans for light industrial areas as early warning detection systems and to improve the identification of point source contamination.