

## towards A CIRCULAR **ECONOMY**

2020 - **2030** 



MINISTRY FOR THE ENVIRONMENT, SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

# Table of Contents

.0	The Circular Economy	page 08
2.0	Malta's State of Affairs	page 17
3.0	Strategy	page 31
4.0	Conclusion	page 56

	Message From The Minister	
	Message From The Ceo	
1.1	Concept	
1.2	European Commission Circula Economy Action Plan	
2.1	Situational Analysis	
2.2	The Resource Recovery And R	
2.2.1	Role	
2.2.2	Vision	
2.2.3	Mission	
2.2.4	Agency Governance Structure	
2.3	Legislative Framework	
3.1	Data Collection	
3.2	Priorities	
3.3	Objectives	
3.4	Outline	
3.5	Actions	
3.5.1	Re-Thinking Waste	
3.5.2	Collection Of Waste	
3.6	Financial Instruments	
3.6.1	Polluter Pays Principle	
3.6.2	Extended Producer Responsit	
3.6.3	Green Financial Instruments	

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### Recycling Agency

page 06

page 07

page 09

page 15

page 18

page 25

page 25

page 26

page 27

page 28

page 30

page 34

page 36

page 37

page 39

page 47

page 47

page 49

page 50

page 50

page 52

page 54

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## Message from the Minister





Economy and environment are two interdependent realities which do not often operate in a complementary manner. Economic growth has undeniably increased the demand for raw materials and resources needed for the production of goods and services. Consumption patterns have been based on the use of an array of environmental resources, which are channelled through the production and the consumption chains and end their cycle in the landfills. This model of consumption is known as the linear economy. As a result, these patterns create pressures on raw materials, and ultimately lead to the lack of regeneration of resources and the loss of habitats and biodiversity.

It is now time to progress towards a model where the integration of economic growth and the efficient use of resources has become crucially important to ascertain sustainability. This led to the development of the concept of the circular economy, which essentially refers to the shift from a linear model based on 'takemake-consume-throw away' pattern to the development and transformation model. This line of thought propagates the optimisation in the use of resources and the promotion of efficient production systems, contributing to eliminate the negative externalities of economic activity, while ensuring economic growth, greater wellbeing of our society and the preservation and improvement of the natural capital.

The transition from a linear economy to a circular economy requires a coordinated effort among

the public and private stakeholders and society at large. This should also lead to new opportunities for the development of new technologies, processes, products and innovative services. It should contribute to the competitiveness of our industry, while generating new business opportunities and creating new value chains and new job opportunities. In this context, it is important to note that the transition to a circular economy requires the adoption of innovative ideas in respect of both technology and society and organisation, to drive the necessary change in production and consumption models.

By adopting this Strategic Vision, the Government of Malta is unequivocally proving its commitment in embracing the key elements of the circular economy. This transformation should create the ideal platform for a more innovative, competitive and for sustainable development. The ultimate goal of this exercise would be to prolong the product life cycle and therefore reduce the generation of waste.

The strategic vision shall identify opportunities to transform consumption and disposal behavioural patterns in a way that contributes to improved waste management practices, whilst reducing harmful emissions, thus mitigating climate change and contributing to the Sustainable Goals 2030.

## Message from the CEO

The Circular Economy Strategy Vision 2020 – 2030 has been developed to complement the Government plan to build the first Waste to Energy plant and continue in its efforts to minimise landfill practice. In its preparation we have taken into account Malta's current state in waste management as well as its obligations to minimise waste generation, the recycling performance leading and recovery of secondary materials.

In line with the EU Commission's Circular Economy Strategy the vision seeks create an environment which would lead to the development of a sustainable, low carbon, resource efficient, and competitive economy. In practice, a circular economy model is based on sharing, leasing, reuse, repair, refurbishment and recycling, edging towards a closed loop, where products and the materials they contain are highly valued. It implies reducing waste to a minimum. Such an approach will lead to innovative business models and consumer behaviour.

The strategy has been developed in a broad context of factors: a growing population as a result of economic growth; the collection of waste that is not favourable to maximise recycling and recovery activities; the limited economies of scale which may adversely impinge on the supply-demand balance in the waste management sector; the introduction of a wasteto-energy plant which would need a constant feed both in terms of quantity and calorific value;



lack of quality data on waste generated and two large economic sectors construction and tourism that can distort benchmarking exercises.

The strategic objectives are: to identify specific waste streams where quality can be improved through effective source separation; divert those waste streams away from land fill practice towards processes that can valorise the materials embedded therein; identify barriers that are hindering private industry from taking the initiative; and provide an environment that rewards innovation and technological advancements. The success factors will be the measured reduction in land fill requirements, reduction in greenhouse gas emissions, increase in recycling and recovery indicators in line with EU Directives, and the uptake by private sector in the field of waste management.

In the course of drafting the Strategy we have identified a number of themes that are generically classified under two segments: the biological ecosystem and the technological ecosystems. Specific sectors will be studied further to identify the most suitable technical solutions. This, we will do together with the Ministry for Environment, Sustainable Development and Climate Change; the Environment Resource Authority and WasteServ Ltd. Collaboration will also involve educational and private stakeholders so as to develop collaborative life-cycle techniques which will lead to the creation of environmental and financial sustainable operations.



# The Circular Economy



### 1.1. CONCEPT

### The concept of the Circular Economy has been discussed and studied for a number of years.

The ever-increasing pressures on our finite resources has increased awareness amongst both policy makers and the general public that the linear economy of make, use and dispose is no longer sustainable. A transition to the circular economy is one where we look at all options across the chain with the intent to use materials more sustainably. More and more European Countries have been developing this innovative yet very relevant system, to the extent that applied research and product development are increasing in strategic importance. This is due to the fact that research can provide the basis for sustainable product development and economic growth. The circular economy is based primarily on ensuring the product life cycle decline stage is effectively postponed by reusing, upgrading, remanufacturing and, of utmost importance, recycling. The circular economy aims at re-

engineering growth, which translates into positive society-wide benefits and goes beyond the current take-make-dispose extractive industrial model. In furtherance, it entails a step-by-step decoupling of economic activity from the end use of finite resources to designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital<sup>1</sup>. The transition to the circular economy entails four fundamental building blocks-materials design, product design, new business models and the right enabling business conditions. It is pertinent to highlight that new business models must allow the user and consumer to do what is needed, by reducing the inconveniences which the consumer and user experience, and by providing additional benefits.

> <sup>1</sup> https://www. ellenmacarthurfoundation. org/circular-economy/ concept









- Designing out waste,
- Differentiating between consumables and durable parts of a product, and

3.

Using renewable natural systems.

four sources of value creation;

- Minimizing material usage compared to the current linear system and minimal times between phases of usage,
- Maximize the number of use-circles and time in each circle,

5. Diversifying reuse across the value chain, and

High quality collection and distribution systems ensuring uncontaminated material streams.

As illustrated in the figure below, the circular economy requires a re-think of processes throughout the lifecycle of products; from design to production methods, to repair and maintenance, and ultimately to collection and recycling or re-using. The waste at the end of the lifecycle is no longer considered as useless material which can only be remedied through disposal. On the other hand, within the circular economy model, this will now be considered as a new resource which will once again feed into the production of new products.



In a country, such as Malta, that is highly dependent on importation of both raw materials, as well as finished goods, the design and production or manufacturing stages within the cycle are relatively minor. This means that the extent of Malta's influence throughout these stages of the product cycle will be limited and focus should be directed towards the latter stages of reusability, repairability, collection and recycling.

A structured transition to the circular economy, will require focus not only on the main waste streams but also on their related sectors. This approach will permit addressing the issues of barriers to innovation across the economic sector and value chains.

The successful transition towards a circular economic system will not be possible without the necessary collaborative interaction. Collective action will involve stakeholders committed in the development of circular business models which can bring disruptive change from current linear models. Individual operators are unlikely to embark on possibly expensive and somewhat burdensome reusing and recycling practices spontaneously and voluntarily. Therefore, these need to be managed through the introduction of Collaborative Life Cycle Activities.



<sup>2</sup> http://www.europarl.europa.eu/news/en/ headlines/economy/20150701STO72956/ circular-economy-the-importance-of-reCollaborative Life Cycle Activities embed three levels: Purpose, People and Action and follows **four steps:** 

Exploring the topic,

**Z.** Engaging with appropriate stakeholders,

**3.** Expounding and addressing the problems, and finally,

4. Evaluating the benefits and implementing solutions together with the business sector. The entrenchment of well-structured collaborative lifecycle approach in the transition to a circular economy would lead to the creation of a community with the intent of addressing waste challenges measurable shared values – societal, environmental and economical.



By adopting the Collaborative Life Cycle Activities concept, the Agency will explore waste streams which could be identified as being part of the circular economy agenda, as is the case with regards to the Beverage Containers Refund Scheme. Any schemes and measures will be supplemented by all the necessary feasibility studies and cost-benefit analysis in order to ensure that actions adopted will be cost-effective and adequately designed to achieve established goals as efficiently as possible. During the evaluation of solutions and actions, the Agency will review existing regulations in order to address any barriers limiting the introduction and implementation of adequate measures and schemes.



The European Commission adopted an action plan in 2015 to help accelerate Europe's transition towards a circular economy, boost global competitiveness, promote sustainable economic growth and generate new jobs. This action plan sets out a number of measures aimed at 'closing the loop' of product lifecycles: from production and consumption to waste management and the market for secondary raw materials. It also identifies five priority sectors to speed up the transition along their value chain (plastics, food waste, critical raw materials, construction and demolition, biomass and bio-based materials). It puts strong emphasis on building strong foundations on which investments and innovation can thrive.

The action plan further promotes close cooperation with Member States, regions and municipalities, businesses, research bodies, citizens and other stakeholders involved in the circular economy.

"In 2016, sectors relevant to the circular economy employed more than four million workers..."

**Towards A Circular Economy** 

### This transition is supported financially through a number of funding programmes, including: the **European Structural and Investment** Funds, Horizon 2020, the European Fund for Strategic Investments (EFSI), and the LIFE programme.

The action plan further promotes close cooperation with Member States, regions and municipalities, businesses, research bodies, citizens and other stakeholders involved in the circular economy.

The EU Monitoring Framework for the Circular Economy working document shows that the transition towards a more circular economy has helped put the EU back on a path of job creation. In 2016, sectors relevant to the circular economy employed more than four million workers, a 6% increase compared to 2012. Additional jobs are bound to be created in the coming years in order to meet the expected demand generated by fully functioning markets for secondary raw materials. Circularity has also opened up new business opportunities, giving rise to new business models and developed new markets, domestically and outside the European Union. In 2016 alone, circular activities such as repair, reuse or recycling generated almost €147 billion in value added while standing for around €17.5 billion worth of investments. >

"a recent stakeholder report suggesting that full circularity would apply to only 9% of the world economy..."

In Europe, recycling of municipal waste during the period 2008-2016 has increased and the contribution of recycled materials to the overall materials demand shows continuous improvement. However, on average, recycled materials only meet less than 12 % of the EU demand for materials. This is echoed by a recent stakeholder report suggesting that full circularity would apply to only 9% of the world economy, leaving vast areas for improvement.

In July 2018, the Circular Economy package published by the European Commission brought into effect four revised Directives, including the Revised Landfill Directive 2018/850, the Revised Waste Framework Directive 2018/851 and the Revised Packaging and Packaging Waste Directive 2018/852. These directives might not have an immediate impact, however the targets set have been made more ambitious with the focus now shifting towards more effective recycling rather than simply recovery. This Package further highlights the importance that the European Commission is placing on the circular economy and the need

for reduction of waste across the Union. The impetus at a European level is now stronger than ever.

Implementing the Circular Economy Action Plan has accelerated the transition towards a circular economy in Europe. At the same time, a stronger, shared vision of the circular economy can only boost ongoing efforts to modernise the EU industrial base to ensure its global competitive edge and preserve and restore the EU's natural capital.

# Malta's State of Affairs



2020-2030



### **2.1** SITUATIONAL ANALYSIS

In April 2019, the European Commission published its Environmental Implementation Report 2019 (EIR2019) reporting on environmental actions and measures being adopted by all 28 EU countries, and also included the Malta Country Report. The Report identifies one of the main challenges that Malta is facing is the need to speed up implementing the EU waste management requirements, due to extremely high landfill rates and very low recycling rates.

This Report also references the Commission's Early Warning Report (2018) to expound this point and highlights that Malta is considered at risk of noncompliance with the 2020 municipal waste recycling target of 50%. The findings of said Report highlighted that in 2016, the municipal waste recycling rate in Malta was 7% which is in stark comparison with the 83% landfill rate. Amongst the recommendations put forward by the EIR2019, it is important to note recommendations made for the revision of the Extended Producer Responsibility Systems (EPRS) and further improvements in waste separation, whilst acknowledging the positive measure of the national roll-out for organic waste collection. The Report further recommends that Malta should pursue resource



recovery and recycling as opportunities for the business sector. It identified opportunities for improving compliance assurance by stepping up inspections and enforcement action, and for improved performance where there already exists a good knowledge base and good practices in supporting Small and Medium Enterprises (SMEs) to move towards a more circular economy.

Besides the ever-increasing generation of waste, Malta faces geographical constraints in disposing of waste generated due to the very limited land available that could be designated for future landfills. These realities require all efforts to ensure that waste is first and foremost reduced and subsequently treated or recycled, in order to reduce Malta's reliability on landfills as much as possible. For landfilled waste to be at more sustainable levels, in 2017 Government announced plans that WasteServ will be constructing a Waste-to-Energy plant. The plant is planned to become operational by 2023.

When compiling waste data, the Agency relied on a number of sources to ensure that figures were as accurate as possible. The main data sources utilised were extracted from: the National Statistics Office Reports, the Environment Resources Authority and WasteServ. Local waste-related reports and other foreign sources, such as reports issued by the European Commission were also consulted. Based on the datasets available, it was possible to derive figures for the main subdivisions of waste sources identified in Malta, as well as produce a breakdown of principal waste streams. Assumptions were necessary to make up for certain inconsistencies in data mainly due to the lack of coordinated data and fragmentation of sources.

In 2018, the amount of solid waste delivered to WasteServ, the largest Maltese waste management operator, amounted to 360,862 tonnes; of which 303,527 tonnes was Municipal, Commercial & Industrial Waste. The main waste streams within this grouping may be further sub-divided into: the black bag collection at 144,780 tonnes; bulky waste collection at 58,198 tonnes and grey bag (recyclable) collection at 23,495 tonnes.

Besides the Municipal, Commercial & Industrial Waste other notable waste streams were 30,627 tonnes of sewage sludge; 9,968 tonnes of manure; 4,499 tonnes of abattoir waste; 2,462 tonnes of used tyres and 3,180 tonnes of waste electrical and electronic equipment (WEEE). The amount of material that was exported for recycling purposes was of 24,935 tonnes.

A break down of the different waste streams identified are being presented in the following graphs. **Figure 1.** shows the total waste generated for Malta in 2018 sub-divided into the main components identified together with their respective amounts in tonnes.

### 2018 - Maltese Waste Generated - 360,862 tonnes Figure 1. LEGEND

Figure 2. below focuses on the municipal solid waste received by WasteServ during 2018 broken down by the main waste elements using Wasteserv, characterisation report.





Magazine Paper:

Figure 3. provides a breakdown as per waste characterisations of the waste collected through the recyclable (dry recyclables) stream with the associated tonnage figures for 2018.

2018 - Maltese Grey **Bag Generated** 23,495 tonnes

Mixed Plastics: 24%

RRRA Strategy is backed on the Data by Courtest of Wasteserve Ltd

### 2018 - Maltese Mixed Municipal Solid Waste Generated - 180,322 tonnes





In 2018, government announced plans to develop a Waste-to-Energy facility. Based on 2018 waste data, the WtE plant will cater for around 40% of the waste delivered to WasteServ, which is not only limited to Municipal Solid Waste. Thus, over 200,000 tonnes would need to be diverted away from landfill practice through other routes; higher in the waste hierarchy than energy recovery.

This waste does not include Construction and Demolition Waste, which is by large the most voluminous single waste stream. So far, treatment of Construction and Demolition Waste has focused on the recovery of spent quarries. Over time, this route is also proving unsustainable and this sector needs to evolve to other recovery models and include recycling within the circular economy principles.

These problems create opportunities that can lead to the development of a recycling industry and through the

2020-2030

creation of secondary markets, it can attract private investment. In line with the efforts being carried out at European Union level, in 2015, the Maltese Government launched The Green Economy Strategy and Action Plan<sup>3</sup>. A year later, the Ministry of Finance announced that it will seek to contribute towards a circular economy and sustainable agendas<sup>4</sup>, reinforcing Government's vision of the green economy in Malta revolving around sustainable growth, efficient use of natural resources, increased economic resilience. green jobs and accessibility to the natural capital. The Green Economy Strategy and Action Plan will foresee prioritising efforts to manage waste in line with the waste hierarchy and to reduce the carbon impact of waste, develop a comprehensive Waste Prevention Programme, and working with businesses to promote waste reduction and reuse as part of a broader resource efficiency programme.



<sup>3</sup> https://www.gov.mt/en/ Government/Press%20 Releases/Documents/ pr152171a.pdf

<sup>4</sup>National Reform Programme Malta 2016



These programmes are also supported through Malta's National Research and Innovation Strategy 2020 and the EU Commission Document - Towards a Smart Specialisation Strategy<sup>5</sup> where it foresees the development of support schemes aimed at incentivising the adoption of best of breed clear and ecotechnology solutions, as well as green financing mechanisms.

The Environment Resources Authority has indicated that whilst the waste generation per capita in Malta remains one of the highest in Europe, the recycling and composting rates of 12% of waste generated remain far below the EU average. The 2014 Waste Management plan<sup>6</sup> confirmed this and proposed a number of actions which would have helped to improve this situation. The poor performance was also documented back in 2013 by the European Commission in its road map for compliance, highlighting the crucial role that economic instruments play<sup>7</sup>. Amongst the suggested actions

the Commission proposed a revision of landfill charges to incentivise diversion from landfill practices and the avoidance of excessive treatment infrastructure for residual waste. The Commission also proposed the consideration of 'pay-as-you-throw' economic instruments to support the thrust towards improved recycling. However, before embarking on such fiscal measures, there is the need to identify improvements in waste management practices and develop polluter pay principles across the board with an emphasis on extended producer schemes and commercial user pay principles.

<sup>5</sup>http://s3platform.jrc.ec.europa. eu/documents/20182/170705/EC\_ RIS3+Malta+\_Towards+a+Smart+Specialisation+Strategy+for+Malta\_2013.pdf/4b7e2835-6089-4cf7-a4fa-7750fab74e66

\* https://msaec.gov.mt/en/aocument%20repository/waste%20management%20plan%202014%20 -%202020%20-%20final%20document.pdf

<sup>7</sup> Support to Implementation – Municipal Waste
– Malta Fiche, 2013

### 2.2 THE RESOURCE RECOVERY AND RECYCLING AGENCY

### **2.2.1** ROLE

The Ministry for Environment, Sustainable Development and Climate Change recognises that beyond the wider concept of the circular economy, a specific effort in our national approach is necessary to improve Malta's performance in waste management, through improved regulations and financial incentives in an effort to increase re-use, repair, recycling and recovery. Such improvements would be aimed to attract stakeholder particpation.

A circular economy will require a culture change in the way waste generated by each member of our society is viewed. To achieve such a paradigm shift the support and cooperation of all partners is essential, including producers; importers and retailers; waste management service providers; local agencies and consumers.

The Government of Malta is committed to reduce the volume of waste currently being disposed of at existent landfills, both for environmental and spatial reasons. In view of this, circular economic activities can play a crucial role in the effective reduction of disposal of waste in landfills.

2020-2030

To date, the circular economy in Malta has not been exploited and explored as much as it actually deserves. It may be the case that industry is not sufficiently cognisant of the economic potential of the circular economy or possibly, the lack of economies of scale reduce the attractiveness it may hold. It will be the Agency's mission to foster a transition towards, and implement measures, for the growth and development of the circular economy. Moreover, the Agency needs to encourage more applied research and product development in the area, in an effort to enhance the process of switching from the current linear model of the economy to a circular one.

It is crucially important for public and private stakeholders to realise that for the circular economy to strive there is the need to develop new technologies that address the existent technical challenges for the reversal of resources. The Agency shall work closely with the Ministry's policy function to develop a Circular Economy Implementation Strategy that will seek to introduce and facilitate a number of programmes that will support efforts to meet circular economy objectives. The Agency will also strive to provide a fair level playing field by monitoring for compliance of all operators within their particular sectorial activity.

### **2.2.2** VISION

To reduce the amount of waste generated by promoting individual and corporate responsibility.

2. To identify opportunities that will contribute towards the extension of product life cycles.

**3.** To continue developing the framework for the recovery and recycling of waste.

**4.** To enhance the utilization of waste as a resource.

### 2.2.3 MISSION

The Agency aims to foster and facilitate the transition from a Linear to a Circular Economy through the effective governance of recyclable resources. The Agency will measure its success on schemes and processes that enhance innovation, the lengthening of the resource life cycle and the prolongment of recyclable material on the market. The Agency strives to influence the local culture and perceptions vis a vis the value of resources and reusable waste.

### 2.2.4 AGENCY GOVERNANCE STRUCTURE

The Resource Recovery and Recycling Agency is the designated competent entity for the Circular Economy under the Environment Protection Act. The legal persona of the Agency is provided through the Public Administration Act. The Resource Recovery and Recycling Agency was approved by Cabinet reference Cap331/ XIII/18 and established as an Agency through LN286 of 2018 under the Public Administration Act (CAP 497), thereby establishing the Resource, Recovery and Recycling Agency (Establishment) Order (Subsidiary legislation 497.28). The Agency's primary goal is to implement measures that will foster the transition to a more circular economy. Through such a transition its envisaged that Malta will increase its efforts in re-use, recycling and recovery applications whilst reducing the rates of landfilling to sustainable levels. The Agency will thereafter monitor the performance of the systems introduced so that the performance requirements are met.

The Agency will develop the Implementation Plan taking the necessary steps to transition to a circular economy. In drawing up of this plan the Agency will maintain active consultations with the principal stakeholders relative to any initiative under consideration. The Implementation Plan will be driven by the need to valorise different waste streams and support those initiatives capable of producing secondary materials for markets both local and overseas. This will ensure that natural resources are kept for a longer period of time in the economy, whilst reducing the amount of waste currently being generated.

The revised Waste Framework Directive contains principles that define the concept of the circular economy, which broadly align to the mission of the Resource Recovery and Recycling Agency:

Improving the efficiency of resource use and ensuring waste is valued as a resource can contribute to reduce dependence on the import of raw materials and facilitate the transition to more sustainable material management and a circular economy model. This transition should contribute to the smart, sustainable and inclusive growth goals set out in the Europe 2020 strategy and create important opportunities for local economies and stakeholders, while helping to increase synergies between the circular economy and energy, climate, agriculture, industry and research policies and bringing benefits to the environment in terms of greenhouse gas emission savings and to the economy<sup>8</sup>.

The Waste Framework Directive also emphasises action directed towards sustainable production and consumption, as well as the focus on the products' life cycle.

In order to make the economy is truly circular, it is necessary to take additional measures on sustainable production and consumption, focusing on the whole life cycle of products in a way that preserves resources and closes the loop<sup>9</sup>.

> <sup>8</sup> Recital 2, Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste

<sup>9</sup> Recital 1, Directive (EU) 2018/851 of the European

The organisational structure of the Agency reflects the very nature of its business. Supported by its internal administrative function, it is hinged on two main pillars, namely:

The business development arm, which will be responsible for identifying and assessing the feasibility of determined waste streams for valorisation through process which add value to that fraction: and



The operational arm, which will regulate and oversee all waste valorisation schemes in force locally.

**Objectives of the Agency can be** summarised as per figure 2.

### Measure

- reduction in landfill practice:
- increase in recyclable materials:
- transparency of operations.

### 2.3 LEGISLATIVE FRAMEWORK

The Agency will work within a legislative framework establishing the adequate regulatory climate that will foster the transition to the circular economy. The initial objective will be one where the concept and guiding principles of the circular economy are embedded into a coordinated legal context that will ensure the subsequent growth and development of the circular model. The Agency will endeavour to follow a set of values prescribed for in the relevant legislation and regulations that facilitate the establishment of an economically feasible and environmentally sustainable circular economy.

The enactment of these legislative principles will provide the right climate for the efficient and effective implementation of waste management services that promote resource reuse, recycling and recovery, whilst promoting collaboration between operators that would contribute positively towards the transition to a circular economy. These will minimise the use of raw materials and the subsequent generation of waste and the promotion of the development of secondary markets for waste derived resources. This framework will regulate the operational dimensions of any waste management activities in order for these to be more aligned with circularity principles and to promote innovative product designs that increase durability, repairability and upgradability.

Within this context, the Agency will promote the transition towards more sustainable production and consumption patterns in both products and services. Through public education and awareness initiatives, the Agency will embark on changing the notion that waste is just the end of life for natural resources and to increase the appreciation of the potential of a resource being extracted from waste. Another guiding principle will be to increase the attractiveness of research and innovation in order to pilot new approaches towards resource recovery and reuse.

Furthermore, the legal framework will lay down obligations on households and economic operators alike to adhere to waste separation systems established by law and to recycle matter in accordance to recycling initiatives in place, whilst ensuring that waste generate will constitute harm to health and the environment. Local Councils and regions should also participate towards ensuring that national targets for the recycling of municipal solid waste be achieved



Research and experience show that the circular economy makes both environmental and business sense. In contrast with the linear economy, the circular economy propagates growth through the reduction of extraction and consumption of resources, energy, water and primary raw materials leading to less waste, while products and resources maintain their value in the economy for as long as possible.

The circular economy needs more than traditional research and innovation or a piecemeal approach to technologies: it calls for changes in entire systems and joint efforts by researchers, technology centres, industry and SMEs, the primary sector, entrepreneurs, users, governments and civil society. It needs enabling regulatory frameworks, and additional public and private investments. Consequently, investment in research and innovation can be a catalyst in the provision of funds to encourage and entice researchers and entrepreneurs to propose and submit ideas and concepts for further development. Needless to say, that if research and innovation is crucial for any economic sector, it is even more crucial for developing sectors. In light of this, the Agency will endeavor to explore the possibilities of introducing seed capital initiatives that would help support innovative ideas and enable their transformation into viable commercial actions.

A successful transition to the circular economy will necessitate continuous collaboration between both the **Environment and Resource Authority** (ERA) and the Resource Recovery and Recycling Agency. ERA is both the Environmental Authority and the Waste Regulator and therefore any circular initiatives would need to satisfy not only the environmental and human health requirements but also meet the end-of-waste criteria.

Currently the Ministry for Environment, Sustainable Development and Climate Change is reviewing the Waste Management Plan for the Maltese Islands – A Resource Management Approach 2014-2020 as it prepares for a new plan for the periods 2021- 2030. The review will establish the changes in waste generation over the past 10 years containing the sources of waste generated and the characterisations of the waste streams. The review should be done in line with the proposed revised Waste Framework Directive and need to see the participation of the Agency, National Statistics Office, the Ministry for the Environment, Sustainable Development and Climate Change, the Environment and Resources Authority and WasteServ.

### The review will provide:

An assessment of the past, current and projected rates of recycling, landfilling and other treatment of municipal waste and the streams it is composed of;

### 2.

An assessment of the implementation of waste management plans and waste prevention programmes in place pursuant to articles 28 and 29 of the WFD; and

3.

that target.

2020-2030

The reasons why it was not possible to attain the relevant target laid down in Article 11(2) within the deadline set therein and an assessment of the time extension necessary to meet



Data collection systems need to be robust, transparent and effective to enable everyone to benefit in the transition to a more circular economy. The responsibility for collection of data needs to be owned by those who use resources and generate waste. Local Councils carry this responsibility on behalf of their residents. Industry and institutions need to undertake that responsibility directly.

Significant progress has been made amongst private households to increase awareness on the need to increase their efforts to reduce and recycle waste generated, efforts should now focus on industry and institutions to incorporate waste management plans in their business models.

The Agency will be working with the Environmental Authority, National Statistics Office, other partners and stakeholders to develop a shared vision to data. The objective is to improve the data collection to facilitate future needs and ensure better coverage and quality. It will strive to improve data consistency and transparency, which will provide an adequate basis for improved decision-making.

2020-2030

### 3.1 DATA COLLECTION

Data is critical in a digitally driven economy. High quality data, information and analytics are essential for effective policy making. Creating an awareness of the amount and type of waste amongst the stakeholders involved in production and the consumer chain can lead to waste reduction.

Waste data is, however, intermittent and at times unreliable. It is important to have in place a system where data is collated systematically, in line with the methodological standards established by the European Commission in relation to waste data collection, and that it can be converted into in-depth knowledge; knowledge that would help Government and private stakeholders make better investment decisions and which would enable us to carry out effective and meaningful post implementation reviews.

Equally important will be the Local Councils' commitment towards waste management within their localities, and would include data on household waste and recycling, as well as any commercial waste managed. This would facilitate conducting audits of collection performance aimed at identifying system inefficiencies that prevent higher yields of recyclables. The Agency will also look into opportunities that can lead to innovative digital solutions that might also incorporate blockchain technology to improve the recording and tracking of certain waste streams and their movement.

Better collection and compilation of data will enable better monitoring of results and would facilitate linking data to final outcomes. In such a way, participation by all relevant stakeholders will be encouraged since efforts will be recognised and concrete improvements may be easily identified. Subsequently, this would increase ownership of actions by parties involved leading to a higher probability of achieving set targets and objectives.



### 3.2 PRIORITIES

The circular economy can thus be summarised as a radical change in the way the economy operates and organises itself to fulfil society's demands for tangible products; it impacts product design and their use, the business models used for the provision of products and value retention mechanisms after product end-of-life. Indeed, the promotion of an approach that goes beyond the area of waste management and necessitate changes in consumer behaviour and supported through legislative and fiscal tools.

A typical example is the introduction of car sharing services, where not only can it lead to a reduction in the number of vehicles on the road but also provides for increased asset usage and lower end-of-life vehicles. The GoTo car sharing service was launched last year with 1,000 cars available and 450 parking spots across the Island, with a number of electric vehicles already included within the fleet and expected to keep increasing in the near future. The Tallinja bike sharing facility which includes 40 e-bikes is another initiative that is part of the transport sharing economy and joined the NextBike sharing platform launched in 2016.

The urgent need to increase Malta's waste management performance and comply with the various waste directives demands prioritisation on the following areas: 1. Collection: the adoption of regulations and infrastructure to improve source segregated waste streams for treatment into appropriate, highquality facilities; reduce leakages like export, landfill disposal or incineration, through regulations that lead to the reliable access to specific waste streams such as the bottle refund scheme;

2. Production-circular waste management activities: the introduction of regulations that require products to be suitable for reuse and repair thus extending the life cycle; facilitation for end-of-life management that promote recycling;

3. Circular waste management activities: the implementation of regulations that valorise the economic value of embedded resources of products or achieve technically feasible recovery rates; and

4. Circular waste management activities-production: the introduction of regulations that promote the uptake of recycled markets or encourage the development of markets for secondary raw materials.



### 3.3 OBJECTIVES

Given the current volumes of waste generation there is the need to investigate the best solutions in order to reach the targets set out by the Waste Framework Directive and its sister directives including the Landfill Directive. As shown in the Sankey diagram above, seven category waste streams have been identified as follows: Bulky Waste, Mixed MSW (from black bag), other MSW, Mixed recycling (from dry recyclables), other waste, other biowaste, and abattoir and other hazardous incinerated waste. In 2018. Wasteserv received 360,862 tonnes of waste from the identified categories and landfilled 297,608 tonnes, which accounted for 80% of the total waste. Moreover, in 2018 Wasteserv exported 14,265 tonnes for recycling, which falls considerably short of the Malta target of 103,000

tonnes to be recycled by 2025. From various studies carried out in previous studies, the waste arising calculation for 2025, is expected to reach 376,000 tonnes, of which 327,000 tonnes are expected to be MSW. These figures have been computed using the projected growth of the Maltese island population<sup>10</sup> and waste generated per capita is assumed to remain constant at 631kg<sup>11</sup> per capita of MSW.

It is expected that in 2025 that amongst the main waste streams suitable for recycling there will be: paper (31,300 tonnes), cardboard (5,000 tonnes), plastics (50,000 tonnes), metals (9,400 tonnes), glass (9,400 tonnes), clothes (17,250 tonnes) and WEEE (3,320 tonnes). These amount to a total figure of around 125,600 tonnes of technological materials that can be transformed to secondary material.

> <sup>10</sup> Malta's 2030 National Energy & Climate Plan <sup>11</sup> Provisional WasteServ data for 2018

RRRA Strategy is backed on the Data by Courtest of Wasteserve Ltd



Another challenge is to process the main biowaste streams: manure, sewage sludge, food waste and other Biodegradable waste, which accounts to 125,000 tonnes and represents 33% of the total waste. Wasteserv is committed to treat 30,000 tonnes of organic waste (from white bag) and other biodegradable waste, around 4,928 tonnes, using the digestors. Manure and sewage sludge, amounting to 42,000 tonnes, could be treated in order to produce soil supplements such as compost, fertilizer or soil nutrients. Should the 72,000 tonnes of biowaste be treated in this way, this would mean a reduction of 17% waste going to the landfill and in turn achieving a 58% treatment rate of all the biowaste received.

One of the main challenges is how to re-organise the 188,000 tonnes collected through the black bag in order to separate the significant amount of technological material that can be re-processed. The Agency will recommend the black bag to be replaced with a transparent one, in order for contents to be easily identified without the need to open the bag. Having a new waste stream consisting only of paper and cardboard, which in 2018 amounted to 35,000 tonnes or 11% of total MSW, would drastically improve the recyclability of the material collected, since at the moment most of the material is being contaminated due to contact with biomaterials disposed of in the same bag.

### 3.4 OUTLINE

Any transition needs good management and planning. There needs to be consistency in the supporting approaches which may require the changing of economic incentives, including; fiscal incentives, changing public investment and procurement processes, providing targeted funding, supporting the dissemination of good practices, encourage business-to-business collaboration, and investment into skills.

Development needs to be economically attractive and the revised WFD contains a new set of annexes amongst them Annex Iva, which puts forward examples of economic instruments. Whereas pay-as-you-throw and landfill charges are the traditional and most common economic instruments, which cannot be discounted, the Agency will opt to increase its focus on other instruments particularly on measures that do not impinge directly on the consumer disposable income.

## These have been identified as:

1. Fiscal incentives for donation of products, in particular food;

2. Extended producer responsibility schemes for various types of waste and measures to increase their effectiveness, cost efficiency and governance;

3. Deposit-refund schemes and other measures to encourage efficient collection of used products and materials; and

4. Sound planning of investments in waste management infrastructure, including through European funds.

### In line with the Circular Economy Principles the following measures will also be pursued:

1. Promote sustainable public procurement to encourage better waste management and the use of recycled products and materials;

2. Use of fiscal measures or other means to promote the uptake of products and materials that are prepared for reuse or recycled; and

3. Support to research and innovation in advanced recycling technologies and remanufacturing. The Ellen MacArthur Foundation summarises the circular economy in two cycles<sup>12</sup> or ecosystems as follows, consumption happens only in biological cycles, where food and biologicallybased materials (such as wood) are designed to feed back into the system through processes like composting and anaerobic digestion. These cycles regenerate living systems, such as soil, which provide renewable resources for the economy. Technical cycles recover and restore products, components, and materials through strategies like reuse, repair, remanufacture or (in the last resort) recycling.

Moving from the current linear economic model to a circular economy will require efforts beyond recycling efforts at end-of -life stage. It includes among others:

• The elimination of the use of toxic substances that limit subsequent treatment processes;

• Strategies that improve the reuse, remanufacturing, repair and recycling of products through, for example, an adapted product design;

• Strategies to stimulate new consumption patterns, for example in the way people buy, use and "dispose" goods. Examples include sharing by consumers as well as businesses.



The formation of recycling clusters or communities for green waste technologies entails significant benefits leading to increased and improved resource, recovery and recycling in Malta. It will contribute to overcome barriers related to the Island's insularity and increase opportunities to overcome issues related to economies of scale. Clusters provide for more value-added particularly if recycling entities are housed geographically close together and enable the development of a wellfunctioning recycling ecosystem that is considerably more efficient. The Agency recognises the importance of identifying suitable designated areas where such clusters or communities can be hosted. Identification of suitable physical space that could be transformed into a recycling park or similar areas would be done in collaboration with all the relevant Government entities and would be

<sup>12</sup> https://www.ellenmacarthurfoundation.org/ circular-economy/infographic

**Towards A Circular Economy** 

specifically designed to meet the needs of the recycling community.

- Such parks will seek to develop a community of primarily service businesses seeking enhanced environmental and economic performance through collaboration in managing environmental and resource management. The cluster approach of a park would provide for increase the competitiveness, attractiveness and environmental image of the operators within the park as well as to reduce the environmental effects of the activities.
- Following the European Commission's Action Plan, a number of themes will be considered, within the local context when developing a strategy for the circular economy. The main themes identified are divided into two sub-categories; the biological cycle and the technological cycle.



## The Biological Ecosystem

### **FOOD AND ORGANIC WASTE**

Addressing food and organic waste is a big part of the circular economy. This consists of food that could still be eaten or repurposed and hence the importance to reduce the volumes of food that end up as waste as well as food scraps and vegetable peelings. It is estimated that over 45% of the black bag contents fall into this category. Wasteserv has recently rolled out a separate organic waste collection system from domestic sources, which

for the first year is forecasted to collect 27,000 tonnes of waste with the potential further significant increases in the future. Although this is estimated to be the largest source of organic waste, there are other sources that need to be separated at source along the supply chain where food is grown, processed, transported and retailed. Within the context of the circular economy this waste can be transformed into a valuable resource at different levels within the waste hierarchy; a transformation that should not only be limited to energy recovery.



### **BIOMASS**

2020-2030

Biomass consists predominantly of plant material and animal wastes. This is another resource that is currently viewed as a nuisance and is often cause of environmental and infrastructural problems as not all this waste stream is captured at the landfill. Sources of biomass are both land-based coming from animal husbandry, abattoirs, agriculture and park waste and marinebased coming mainly from fisheries and aquaculture. They are an essential material in the circular economy. Biomass besides having an energy recovery potential similar to organic waste has considerably higher nutrient recovery potential; can be a source of animal feed, organic fertilizer and even pharmaceuticals; potentially proper handling of this waste stream can lead to new opportunities further up the waste hierarchy.

### SEWAGE SLUDGE

Sewage sludge is the residual by-product of sewage treatment of industrial and municipal wastewater. This material may also be an important contributor towards the circular economy and the treatment of sewage sludge may produce syngas and biochar, as well as being incinerated in specific plants. Properly treated sewage sludge may also be used in agriculture, as a soil supplement. The European Commission has been actively working on the Fertiliser Directive to unlock this potential.

The total estimated volumes of these three fractions alone represent nearly 40% of the target diversion from the current landfill practices. Organic and biomass waste when landfilled has a higher impact on climate change than plastic and, hence the importance of adequate treatment.



## The Technological Ecosystem

### CONSUMER GOODS WITH SPECIAL FOCUS ON PACKAGING AND SINGLE **USE PLASTICS**

Malta already promotes the separation of packaging and single use materials through the collection of dry recyclables. This process, whilst being a major step to source separate, does not maximise on the recycling for re-use opportunities. A major development is Government's commitment to introduce the beverage container refund scheme where not only has the objective to capture 90% of the containers placed on the market but also to provide a high-quality recyclable material that can be re-used as a result

of capturing the waste at an early stage. This new approach can be studied and expanded to other waste streams. Plastic recycling for re-use technology is evolving at a very fast rate. Its success depends on the quality of the recycled plastic. Furthermore, the consumer goods industry entails a significant amount of single use plastics which, where financially viable, alternatives should be made available through the introduction of regulations aimed at reducing this practice. In this context, the Environment Resources Authority has published a Plastic Strategy, where it provides its direction on single use plastic in line with the European Commission direction.

### WHITE GOODS

The development of the circular economy package by the European Commission seeks to extend the product life cycle which would include the ability to repair and the recyclability of household appliances. This approach counters the concept of programmed obsolescence. Within the concept of the circular economy are also the sharing principles where, otherwise discarded assets, can have increased usage. These principles, coupled with opportunities in remanufacturing, would lead to a reduction in the generation of WEEE. On the other hand, once a white good is discarded there are opportunities to recover secondary components or raw materials. The concept of repairability is very relevant within the Maltese context given the domestic market structure, where reliability on imported raw materials and finished goods is high. The evolution of this sector may be monitored through various indicators, such as the number of enterprises and employees carrying out activities linked to repairs and upgrading of products.

### MANUFACTURING

2020-2030

As consumerism grows with economic prosperity, manufacturing is on the rise. Whilst waste from this industry is not covered under MSW obligations the importance of the circular economy within manufacturing must not be underestimated. Not only will the circular economy lead to reduced

### **CONSTRUCTION SECTOR**

waste generation which will end up in the only landfill on the Island, but it will also lead to reduced demands on raw materials which will make manufacturing more attractive. The adoption of ISO 14000 standards should be encouraged within the manufacturing industry, in order for organisations to minimise the negative affects their production process might have on the environment.

Construction and demolition waste is the largest single waste stream generated in Malta, outweighing all other waste streams combined. Currently, the common practice is to use this waste to recover disused quarries and thus offering the opportunity to develop a new ecology. However, indications are that this will not suffice in the medium to long-term, and therefore other practices need to be further studied and developed. Over the years there have been a number of initiatives aimed at developing new products from construction and demolition waste, however their economic feasibility has often proved to be a major hurdle. In order to drive the construction sector more towards the circular economy, actions that lead to the creation and sustainability of secondary markets would need to increase demand. This would both increase interest in innovation and increase financial sustainability.



## Tourism

The growth in tourism, one of the main pillars of the Maltese economy, calls for more effective waste management measures across the board within the sector. The management of solid waste in a tourism dominated island is particularly problematic due to changing consumption patterns, transient population, and seasonal variations in solid waste quantity and composition. With over 16 million bed nights per annum<sup>13</sup> the impact on the carrying capacity on the waste infrastructure may be significant.

Whilst the waste composition from the hospitality industry is similar to MSW, its impact is still significant enough to necessitate specific attention. Together with stakeholders, specific waste management strategies will need to be reviewed to make them more sustainable and reduce the burden on national infrastructure.

> <sup>13</sup>MTA figures 2017 - http://www.mta. 6327-46a4-93f9-8150350d6844

### 3.5 **ACTIONS**

### 3.5.1 **RE-THINKING WASTE**

Food waste is an area where action is required and one which affects society as a whole. The Agency will monitor food waste reduction targets set by the European Union and will implement any necessary measures and promote action that facilitate the achievement of said targets. This will be coupled with a campaign on food waste, which will seek to raise awareness on the problem and put forward ideas how reduction can be achieved. Besides raising general awareness, the Agency will also launch educational campaigns targeting certain sectors of society with a particular focus on children and the youth population.

In order to address the problem of increasing food and organic waste, it could also be considered to introduce a number of schemes and incentives specifically targeting retail outlets that dissuade the generation of preventable and unnecessary waste, often single use. This would be coupled by the promotion of sustainable agricultural practices that would enable the farming sector to transform waste into a valuable resource.

2020-2030

The production and use of plastics, especially single use plastics, is another area that deserves immediate action in order to curb the amount of waste generated each year, which is proving to having a significant and real impact on the environment and climate change. Besides the introduction of the beverages containers refund scheme, the Agency will monitor this economic sector to ensure that already set targets for the reduction of plastic waste are met. It will primarily promote the purchase and use of less single use plastic products by consumers, and furthermore to advocate the reduction of plastic packing to producers. The use of media campaigns and awareness programmes will be inevitable; however, it could also make economic sense to introduce incentives that would encourage the use of less plastics, especially where this is avoidable. The possibility of implementing similar return schemes on other products with significant market impacts is definitely an option that will be pursued, based on the experience gained from the beverage containers scheme.

It is a well-known fact that one of the largest contributors to waste in Malta is the construction industry. Being one of the main economic sectors and an employer of a significant share of the working population,

makes this area very sensitive and one that must be addressed with caution. Having said that, the Agency will embark on the promotion of the re-use of materials within the industry in order to reduce the amount of waste disposed of in landfills and quarries. It will then develop tools that will encourage this re-use of materials, as well as the use of more sustainable materials and practices for the construction of new buildings. The aim is that through directed and effective policies and measures, Malta would be able to reduce its material footprint. This will apply to both the construction sector and the domestic material consumption segment.

The same applies for the manufacturing sector; the Agency will support and facilitate changes in the production methods that design waste out and that require less energy inputs. This will be coupled by the promotion of the use of different and more sustainable inputs, which might also be sourced as waste from other sectors of the economy. The introduction of targeted initiatives and incentives will enable producers to address waste generation at the production stage rather then having to deal with waste following the end of the product's lifecycle.

The collaborative or sharing economy is an economic model which has garnered much popularity in recent years and one that is also increasing its presence in Malta. The European Commission refers to this economic system as business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals<sup>14</sup>. The main proponents of this system are mainly present in the accommodation sector and the transport sector. However, there is the opportunity to explore new areas, such as the retail and textiles sectors, that would contribute positively to a reduction in waste created. The Agency will continue to study

### "This facility will partially address the issue of organic waste and biomass..."

these business models and develop adequate policies and incentives that encourage, regulate and monitor the sharing economy. Combined with this approach, the concept of leasing of appliances and certain consumer goods will be further explored and considered as an innovative solution in addressing waste issues, possibly aided with specific schemes and incentives.

The development of a Waste to Energy project is listed as a major project in Malta's Operational Programme 1 Fostering a competitive and sustainable economy to meet our challenges for the European Social and Investment Funds (ESIF) programming period 2014-2020. As already referenced, the WtE capacity is expected to cater for 40% of waste currently being landfilled. In addition to its contribution to managing waste in Malta, a Waste to Energy facility provides the opportunity for generation of low carbon and renewable electricity in Malta. This facility will partially address the issue of organic waste and biomass, diverting such waste away from landfills and into energy production. The Agency's role is to study and identify waste that will be diverted away from the WtE plant and which should be earmarked for recycling and transformation into secondary resources. For the medium and long-term, the Agency will also consider studying new and innovative options on how to address biomass, such as commissioning studies on the possibility of a biorefinery that would also be able to produce value-added chemicals.

<sup>14</sup>http://ec.europa.eu/internal\_market/scoreboard/\_docs/2018/ collaborative-economy/2018-collaborative-economy\_en.pdf

### 3.5.2 COLLECTION OF WASTE

Recommendations by the European Commission's Early Warning Report have been made to regionalise the waste collection. This should be considered for all collected waste streams to be brought under the responsibility of Local Councils, and fiscal incentives could be considered in order to increase the drive to separate at source. This can be done by treating separately the collection costs and disposal costs. The former costs may be better managed through infrastructural improvements, whilst the latter can be studied to incentivise source separation. This could address another recommendation from the EWR, that of having Local Councils become more accountable for recycling targets.

The door-to-door collection infrastructure is divided into; domestic paid by Local Councils and commercial paid by commercial users. There is a lack of enforcement in the latter and quite a

2020-2030

number of commercial users do not generate enough waste to justify the costs associated. A recommendation by MSDEC and Local Councils was to introduce a charging mechanism through Local Councils. This would reduce free riders and can be more enforceable. It is imperative that the design and infrastructure of waste collection should be conducive to recycling practices and encourage source separation of waste.

The revision of the Packing and Packing Waste Directive has increased the targets on recycling, while the revision of the Waste Framework Directive puts more impetus on recycling rather than recovery. In the current scenario recovery considerably outweighs recycling, therefore the European Commission has increased its push towards better quality recycling. In order to achieve this, it is crucial to have adequate waste separation and collection in order to divert waste from mere recovery into secondary materials which can be re-introduced into the economic cycle.



### 3.6 FINANCIAL INSTRUMENTS



### **3.6.1** POLLUTER PAYS PRINCIPLE

The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it and take into account external effects on human health and the environment. The polluter pays principle is an economic principle through which external costs can be internalised and is a way of allocating costs for pollution. This principle has been one of the guiding environmental principles in European Union law since 1975. The principle does not answer the question of who shall be seen as the polluter, when the pollution has been deemed to have occurred or which costs shall be covered. The principle allocates liability for costs for waste disposal or waste management to the final holder of the waste, or the previous holders of the waste. The polluter pays principle encompasses ex ante, as well as ex post applications. The EU Waste Framework Directive provides for liability to be channelled to the producer of the product or the distributors or holders of this product.

The most common ex ante application is producer pays principle whereby the responsibility for the cost of waste management is carried by those who produce the product. Whilst the ex post application is the user pays principle. In Malta, this principle is further divided into two: commercial, industrial and institutional users, who are directly responsible to pay for the waste they generate, and the households whose responsibility is carried by Local Councils and financed for through local taxes.

### Ex Ante Application – Producer Pay Principle

The revised Waste Framework Directive contains a number of new rules on polluter pays principle applications. The emphasis being on transparency and full recovery of associated costs. In Malta's case where pay-as-you-throw schemes are not yet directly applied to households, it would be wise to take the opportunity to revisit them. The current extended producer responsibility (EPR) schemes, were part of a strategy to support better design for managing post-consumer waste streams. These schemes have fallen short of this objective. The recycling targets show little, if any, signs of improvements and there is considerable direct and indirect public funding to the schemes for them to survive.

### Ex Post Application – User Pay Principle: Household users and Commercial users

Local Councils are responsible to fund the user pay principle for households, who pay for the collection and disposal of mixed waste. The collection of household dry recyclables is organised and paid for by packaging waste schemes and in some instances supplemented by Local Councils, while household organic bag collection is organised by Local Councils and paid through WasteServ.

On the other hand Regulations oblige the hospitality industry to pay for their collection systems, these Regulations are not robust enough nor exhaustive to cover for all the commercial activities beyond the hospitality industry. Furthermore, the regulations are not clearly obligatory, do not impose separation at source making enforcement weak. Public institutions on the other hand have no regulatory obligations whatsoever. Regulations need to be improved and provisions made so that Local Councils or the collection operator can charge for collection of commercial waste. Thus, before any consideration for a pay-as-you-throw mechanism for households, a number of measures that need to be taken to improve the system so that the collection infrastructure is made more customer centric and commercial and institutional waste is properly managed.



### **3.6.2** EXTENDED PRODUCER RESPONSIBILITY

The concept of Extended Producer Responsibility is one that deserves further consideration and practical application in various areas and sectors, and one which has recently also become very popular within the European Union. The Agency will focus its review of EPRs in the context of the Waste Framework Directive's 2018/851 definition: extended producer responsibility scheme, means a set of measures taken by Member States to ensure that producers of products bear financial responsibility or financial and organisational responsibility for the management of the waste stage of a product's life cycle.

EPR models should form an intrinsic element for the transition to a circular economy. Using a multi-actor approach, waste management solutions can be developed focusing on real problems and creating leverage for new circular economy activities. The creation of circular economy business models rests on two pillars. On one hand it is an explorative activity to identify individual products or waste streams or groups of similar products or waste streams, carry out research on sustainable technical solutions and assess market conditions whilst on the other hand, it is the collective action of bringing together the stakeholders from various horizons and motivations with complementary types of knowledge – technical, regulatory, practical and others.

The adaptation of this concept within the local context will revolve along the lines where the producers placing products on the market have the necessary financial and organisational means to meet their extended producer responsibility obligation across the whole territory, product and material coverage. This shall be done without limiting those areas where the collection and management of waste are the most profitable, whilst; ensuring equal treatment of producers of products regardless of their origin or size, without placing a disproportionate regulatory burden on producers, including small and medium-enterprises,

of small quantities of products; and performing recovery and maximising the preparation for recycling operations.

Amongst the most pressing tasks that the Agency will undertake will be the finalisation of the regulations and negotiations of the beverage container refund system, which will be operated through the EPR model. The scope is to review the regulations such that they will enable the operators in the sector to carry out their responsibilities under the principles of the extended producer responsibility. The beverage container refund scheme is intended to curtail the plastic littering resulting from single use beverages containers and in the process set up a source segregated system that will lead to a high recovery and recycling of single use beverage containers. The system envisages the establishment of a Beverage Container Refund System where it will introduce a fiscal incentive by means of a deposit payable on every container covered by the scheme which would be fully refunded on return of the container at designated places. This will be operational by the end of 2019.

Plastic bottles and containers are not the only areas where the models of EPR are viable and economically feasible, and it is the Agency's aim to continue exploring new areas where this concept may be applied locally. The Regulations developed in relation to the beverages container refund system will serve as the basis for future initiatives and will allow the Agency to gather the knowledge and expertise to further improve where necessary.

Resources worth considering, and which already are being included in such EPR models within the EU include; the tyres sector, mattresses, endof-life vehicles and batteries, white goods and other consumer products (including furniture), and textiles. Another area worth exploring is the area of WEEE.

The current schemes are not functioning to their full potential, even though local councils pay for bulky waste collection and Wastserv pays for storage and handling costs. Thus, the development of a plan could be considered together with the respective industry with the aim of having both the recyclers and the current members of the schemes participating. The scope will be to try to identify whether the local recyclers suffice in handling such waste effectively and without excessive costs and having to rely constantly on WasteServ. Once again, this plan should incorporate the entire process; from collection stage to recycling stage.

The Agency further intends to explore the transition into recycling by identifying specific waste streams where reprocessing will lead to new products for which there is existing market demand supplemented through Green Procurement initiatives so that new markets are created. Such an approach is intended to attract private participation and will lead to a step change in recycling industry. For a successful recycling industry, where some technologies are sensitive to economies of scale, will need to consider consolidation of waste streams to address the supply side. On the other hand, the industry may need to explore tapping into export market for their end-product to overcome demand constraints.



### **3.6.3** GREEN FINANCIAL INSTRUMENTS

Transitioning to a circular economy will lead to growth in the green economy bringing with it the creation of more jobs. During the transition to a circular economy the Agency should also consider an approach where this process could be accelerated. Green Growth can be stimulated through sustainable innovation that provides positive economic impact and avoids harm to biodiversity, climate and raw materials. However, innovation can encounter barriers which could either delay the process or render it financially unsustainable.

In such circumstances where market failures occur, a feasible initiative may struggle to flourish because of limitations inherent within the market that do not allow the forces of demand and supply to interact as desired. This is no more true than in the case of innovative products and processes, where entering the market may be constrained due to various factors. However, once barriers are surmounted these initiatives may be hugely successful. Government could provide help to overcome such barriers particularly where innovative initiatives are line with the indicated themes and will result in a faster transition to the circular model. The Agency will study the possibility of developing a programme that will create the opportunity for initiatives to benefit from adequate financial assistance. The consideration of which initiatives will be able to qualify for assistance will be determined on the following principles:

The initiative should contain a clear quantitative and qualitative target within the central themes, and has the potential to bring about sustainable economic growth (green growth);

 It has the potential to be financially profitable in the near future and inspires other businesses to adopt similar approaches;

 The initiative should be facing obstacles impeding its implementation and

Support may be given through a mutual pledge under law between the proposer and Government. In order for such a green pledge to be put into practice there needs to be an inter-ministerial committee established between the Ministry for the Environment, Sustainable Development and Climate Change, the Ministry for Finance and the Ministry for the Economy, Investment and Small Business, to design and determine the specific conditions for eligibility and the type of support to be provided.

government's intervention or assistance can help remove such hurdles;

 It can produce immediate results, preferably within a timeframe of three years, and should contribute to an increase in local added value;

• The initiative should be technically viable and is undertaken by the proposer who will play an active role.

# Conclusion



Developing an outline for the transition to a Circular Economy is not enough. The scope of this vision document is to stimulate the active participation of relevant stakeholders that will enable Malta to reach its targets. Whilst there are a number of Directives setting ambitious recovery and recycling targets, only a structured approach towards this transition will ensure success in having a real impact on national waste management practices that will ultimately translate into a cleaner environment and healthier population.

All the relevant stakeholders will have to fully commit themselves and coordinate actions domestically in order for Malta to meet the ambitious goals being set at a national level, particularly in relation to the reduction in landfill practices to below 35% of

### "...the Agency aims to breakdown the remaining 200,000 tonnes of waste..."

Municipal Solid Waste generated by 2025 and 10% by latest 2040. This target will be achieved through a two-pronged approach: Waste-to-Energy and the Transition to a more Circular Economy. Through constant stakeholder dialogue, the Agency aims to breakdown the remaining 200,000 tonnes of waste into specific waste streams and identify suitable treatment solutions that will increase the recycling performance and bring Malta in line with the various targets established in the Waste Framework Directive and other waste related Directives. Thus, the shift towards the circular economy using a life cycle approach and the focus on

quality recycling will be crucial in achieving the set objectives. The vision being laid down in this document will pave the way towards the re-structuring of the economy and considerably divert away from landfilling practices.

Malta has a number of international obligations to adhere to and only joint, coordinated domestic efforts can enable full compliance in a timely manner. In this context, RRRA and the Environment and Resources Authority will develop a set of metrics that will enable the analysis and monitoring of progress registered and observe the on-going changes within the economy.

The Agency will carry out quality evaluation of the flagship initiatives which will be reported annually. The continuous assessment of the Agency's progress will complement the goals for significant reduction in disposal practices, whilst driving for an increased participation in the recycling market, contributing to meeting the targets contained in the different waste related Directives. The success of the Agency will ultimately be assessed by the actual impact the various initiatives and measures will have on the reduction of the negative impact waste has on society and on the environment, and on the ability to develop a sustainable approach towards economic growth and social wellbeing.





2020 - 2030