

Sustainable Financing for Waste Management: Design It Yourself Workbook

# Step 1 - Identify Needs / Scheme Goals

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| **What Involved to Complete Step** Identifying what the scheme seeks to achieve will influence almost all aspects of scheme design – i.e., if seeking primarily to:* manage litter, this may influence decisions around type of items collected, ease for community to access Collection Depots, and level of the Deposit component of the ARFD.
* enable “product stewardship” or provide for shared responsibility for waste management (across importers, consumers, and the government), this may influence decisions around when to collect the ARFD (at import or upon return), and type of Collection Depots selected.
* fund the purchase of equipment to provide in-county recovery/circular economy solutions for waste management, this may influence the level of the Fee component of the ARFD.

This step will assist gathering of data to:1. Review and understand the operation and performance of any existing ARFD / Container Deposit / buy-back Schemes (voluntary or regulated).
2. Understand the general flow of End-of-Life materials and the current situation for litter and waste management.
3. Identify current situation for financing of waste management and identify potential financing gaps.
4. Confirm what is sought to achieve for future waste management through the implementation of an ARFD scheme.
 | **Information / Consultation Recommended to Complete Step*** Findings from a recent Waste Audit or complete a Waste Audit using a consistent methodology [Waste Audit Methodology: A Common Approach](https://pacwasteplus.org/resources/waste-audit-methodology-a-common-approach/)
* Findings from a recent litter survey or complete a Litter Survey using a consistent approach such as the [Australian Litter Measure](https://www.sustainability.vic.gov.au/research-data-and-insights/research/australian-litter-measure)
* Data / reports from existing/previous ARFD / “buy-back” schemes – items collected, depot operation, information on materials processing, and items exported.
* Information from recyclers – current recycling activities, information on materials processing, items exported, and challenges/ barriers / opportunities for recycling.
* Information from customs and exporters – data on items imported and exported.
* Information from government waste team – current waste flow and materials management, data from kerbside recycling, and challenges/ barriers / opportunities for recycling.
* Data from Treasury / Finance, and Waste – current financing for waste management.
 | **Resources Available**SPREP / PRIS /World Bank / UNEP Waste Audit MethodologyComplete a Litter SurveyPacWaste Plus Guide for Investigative Questioning |
| 1. Existing ARFD / Container Deposit / buy-back Scheme
 | Are there any existing or previous ARFD / Container Deposit / buy-back Scheme in operation? (i.e., brewery glass bottle collection scheme, schemes run by NGO or church, voluntary scheme, litter pickers paid for collection of PET bottles, etc)If No – continue to Step 1.2 belowIf Yes – It is recommended to complete the following table to gather information on the existing scheme, or schemes (if more than one), to understand operations, and consider successful components and opportunities for improvement for consideration in a new or expanded ARFD scheme.

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| **Scheme Name** |  |
| **Supported by legislation?** | Y | Name of legislation / regulation: |
| N | Provide details (i.e., who operates scheme, how funded) |
| **What items collected:** | Items **imported** or **locally manufactured**  annually\* | Items **collected** by scheme annually\* | How are items processed? (i.e., stockpiled / exported / recycled in-country?) | Items exported / recycled in-country annually\* | Scheme performance (import/ manufacture v export/ recycling\*\*) | Other comments |
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|  |  |  |  |  |  |  |
| \* Use the metric consistent with existing reporting: i.e., unit, weight, volume, etc. Recommend metric selected be common across all relevant columns. If volume to weight conversion is required, recommend using the South Australia [Green Industries: Volume to Weight Calculator](https://www.greenindustries.sa.gov.au/documents/Waste%20and%20Recycling%20Reporting%20Template.xlsx?downloadable=1).\*\* Some items collected for recycling though a CDL or ARFD can be stockpiled or landfilled, and not recycled (i.e., exported to an overseas recycling facility or recycled/repurposed in-county). While these items have been collected by the scheme, they are recommended to be excluded from the “scheme performance” calculation as they are not contributing to the intent of the scheme. |
| How many Collection Depots in operation? |  | Who operates Collection Depots? |  | Other comments on collection depots: |  |
| Analyse the Recycling Performance of the scheme(s). If percentages are low, there may be opportunities for revisions to the scheme. Common reasons for low recycling performance review may be:* the Fee component may not be sufficient to fund the processing/export of ARFD items
* the Deposit component may not be sufficient to motivate communities to return their ARFD items
* Collection Depot(s) may not be accessible to all community members
* scheme logistics and operating systems not sufficient to enable effective collection and transport of ARFD items
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| **ARFD Intent:****Is there opportunity to improve or expand the existing scheme – i.e., improve current recycling performance, expand number of items collected, expand number of communities involved?** | Y | Provide details on opportunities for improvement (i.e., review of Fee or Deposit amounts, increasing the geographic context of the scheme, increase the number of eligible products?): |
| N | Consider if appropriate to continue this Workbook. This Workbook is designed for users seeking to develop or expand an ARFD Scheme. |
| **Other comments** |  |

**.** |
| 1. Materials Flow - Potentially Recyclable Items
 | **Understanding Waste Composition**From the most recent waste audit, copy and paste the pie graph that illustrates the composition of waste going to landfill / dumpsite. This graph provides visual illustration of materials and quantities currently being disposed. (Note: it is recommended that data utilised be no older than 5 years. If it is, it may be worth considering undertaking a new waste audit (using the agreed [common methodology](https://pacwasteplus.org/resources/waste-audit-methodology-a-common-approach/)) to ensure information is correct).**Recoverable Materials Disposed to Landfill / Dumpsite**From the waste audit findings, record data on the ARFD target materials currently going to landfill / dumpsite in the below table. This information will illustrate the burden ARFD scheme items may be having on landfill / dumpsite infrastructure.

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| --- | --- | --- | --- | --- |
| **Items** | **Results / Findings (weight / volume)** | **Total – All Landfills / Dumpsites** | **Percentage of waste to Landfill** | **Comments** |
| **Results Landfill / Dumpsite #1** | **Results Landfill / Dumpsite #2** | **Results Landfill / Dumpsite #3** | **Results Landfill / Dumpsite #4** | **…** |
| PET bottles (plastic) |  |  |  |  |  |  |  |  |
| Aluminium cans |  |  |  |  |  |  |  |  |
| Glass bottles |  |  |  |  |  |  |  |  |
| Other containers – HDPE, LPB, tin food cans |  |  |  |  |  |  |  |  |
| Vehicles |  |  |  |  |  |  |  |  |
| Heavy Equipment |  |  |  |  |  |  |  |  |
| Whiteware |  |  |  |  |  |  |  |  |
| Electronics |  |  |  |  |  |  |  |  |
| Tyres |  |  |  |  |  |  |  |  |
| Batteries |  |  |  |  |  |  |  |  |
| Solar panels |  |  |  |  |  |  |  |  |
| Used Oil |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |

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| **Litter Assessment**Many ARFD schemes in operation in the Pacific were designed to combat litter. If this was identified as a scheme goal, a litter assessment can provide data to understand the litter stream and make evidence-based decisions for scheme design.Develop a sample methodology (the Sustainability Victoria [Australian Litter Measure](https://www.sustainability.vic.gov.au/research-data-and-insights/research/australian-litter-measure) may be useful as a guide) to undertake a litter assessment to understand the types and volumes of litter being generated. It is recommended to select public places – parks, beaches, roads – known as popular picnic spots or “hot spots” for litter or illegal dumping as sample locations.From the findings, record data on the ARFD target materials discarded as litter in the following table.

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| **Finding of Litter Assessment** | **Extrapolated****Estimated Litter Generation in Country** | **Comments** |
| **Items** | **Results / Findings (items collected / weight / volume \*)** | **Total** | **Percentage** |
| **Sample Area 1** | **Sample Area 2** | **Sample Area 3** | **…** |
| PET bottles (plastic) |  |  |  |  |  |  |  |  |
| Aluminium cans |  |  |  |  |  |  |  |  |
| Glass bottles |  |  |  |  |  |  |  |  |
| Other containers – HDPE, LPB, tin food cans |  |  |  |  |  |  |  |  |
| Vehicles |  |  |  |  |  |  |  |  |
| Heavy Equipment |  |  |  |  |  |  |  |  |
| Whiteware |  |  |  |  |  |  |  |  |
| Electronics |  |  |  |  |  |  |  |  |
| Tyres |  |  |  |  |  |  |  |  |
| Batteries |  |  |  |  |  |  |  |  |
| Solar panels |  |  |  |  |  |  |  |  |
| Used Oil |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |  |  |

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| **Flow of Potentially Recyclable Materials**The current management of the potentially recyclable materials is key information when designing an ARFD for scheme design. Complete the following table to illustrate where recyclable materials end up once they reach the end of their useful life. Gather as much information as possible but do not dwell if data to answer every question is not available. (Note: further details will be asked on the management of these materials in Step 2).Some of the data necessary to complete the table below (and in Steps 2 and 5) will be sourced from the Private Sector such as importers and existing recyclers/transfer facilities or exporters. These organisations may hesitate to share data as there may be commercial sensitivity (they may not want their competitors or communities to see volumes or export arrangements, etc). It is recommended to respect their privacy and find a mutually agreeable way for the data to be obtained – consider signing a confidentiality agreement and commit to only using the data in internal discussions and in a generalised consolidated way (i.e., not able to see individual operations), or share data via an independent agency (i.e., Department of Treasury / Finance, an accounting firm, or external consultant) who will undertake the generalisation and consolidation. **Private Sector recyclers/transfer facilities may be key partners in an ARFD scheme. If the trust of these agencies is broken at an early stage in the process it may be difficult to regain.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Disposed to Landfill / Dumpsite | Collected by Recyclers/ Transfer Facilities and Stockpiled | Collected by Recyclers/ Transfer Facilities and Exported | Collected by Recyclers/ Transfer Facilities and Recycled in-country | Litter | Dumping / Burnt | Comments / Other DisposalProvide Details and Weight/Volume |
|  | **Weight / Volume \*** |  | **Weight / Volume \*** |  | **Weight / Volume \*** |  | **Weight / Volume \*** |  | **Weight / Volume \*** |  | **Weight / Volume \*** |
| PET bottles (plastic) | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Aluminium cans | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Glass bottles | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Other containers – HDPE, LPB, tin food cans | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Vehicles | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Heavy Equipment | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Whiteware | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Electronics | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Tyres | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Batteries | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Solar panels | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Used Oil | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Other | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |
| Other | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  | Y/N |  |  |

\* Use the metric and timeframe consistent with existing waste audit and other documents: i.e., weight/month, volume/year, etc. Recommend metric and timeframe selected be common across all relevant columns to enable comparison and reporting. If volume to weight conversion is required, recommend using the South Australia [Green Industries: Volume to Weight Calculator](https://www.greenindustries.sa.gov.au/documents/Waste%20and%20Recycling%20Reporting%20Template.xlsx?downloadable=1). |
| 1. Current Waste Management Financing
 | Gather data to complete the following tables to understand the current situation for financing and expenses for waste management / recycling. This information will illustrate potential gaps in waste management financing, and where an ARFD may assist. |
| **Current Funding Methods**

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| --- | --- |
| Current funding sources for waste management  | Annual budget if available or other information  |
| General government revenue | Y / N |  |
| Landfill or other levy (“tip charge”) | Y / N |  |
| Land rates revenue | Y / N |  |
| Overseas donors | Y / N |  |
| Tourist departure tax | Y / N |  |
| Existing Container Deposit Scheme  | Y / N |  |
| Other: Supply details  |  |  |
|  |  |  |

 | **Understanding Expenditure**

|  |  |
| --- | --- |
| Current key waste management expenditure | Annual budget if available or other information |
| Landfill management / operation | Y / N |  |
| Collection contracts | Y / N |  |
| Staff | Y / N |  |
| Equipment operation | Y / N |  |
| Infrastructure purchase | Y / N |  |
| Recycling or recovery activities | Y / N |  |
| Community awareness and outreach | Y / N |  |
| Other: Supply details | Y / N |  |
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| Does current funding allow effective waste management /recycling activities to be undertaken? |
| Yes | No | Maybe | Don’t know | More information needed |
| Comments |
| With additional funding, what additional waste management/recycling activities could be undertaken/enhanced? |
| Keep these thoughts in mind during completion of the next steps |

 | **Note:****an ARFD may result in “perverse” or unintended impacts to existing financial arrangements – for example:*** If ARFD items make up ~20% of waste to landfill (identified in Step2.2), the “tip charge” revenue may be 20% reduced. How will this affect the operating budget? Who need to be involved to discuss how this can be managed to ensure the goals for waste management are achieved
* Any voluntary ARFD schemes may be affected by the adoption of a regulated ARFD. How can the successful components of an existing voluntary scheme be maintained (or enhanced) by the adoption of a regulated ARFD
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| Analysis: 1. What Seek Scheme to Achieve for Waste Management / Recycling
 | Reflecting on the above data on current litter/waste/recycling situation, and in consultation with stakeholders and waste/recycling/transfer experts, consider what an ARFD Scheme may achieve for future recycling and waste management. Consider the possible goals / factors presented below and illustrate importance by assign each goal a priority. Note: It is recommended to undertake this exercise many times (i.e., with political decision makers in Step 3, with the Working Group in Step 4, and during community consultation in Step 7 etc). By identifying key goals of the scheme in partnership with key stakeholders will:1. Help understand what is important for stakeholders
2. Help give stakeholders an ownership and by-in to a scheme – if they understand the problem, they may want to may be part of the solution
3. Focus scheme design to achieve the most important goals

Record the answers each time and consolidate and communicate the top priorities - keep them front of mind during ARFD scheme design  |
| Consider possible ARFD Scheme Goals as illustrated below, and assign each one a priority by dragging it into one of the four boxes:    Other priorities may be identified for the scheme to achieve – such as Alignment with the Sustainable Development Goals (e.g., Target 12.5 ‘reduce waste generation by 2030’). Write or illustrate these and place in the priority list. | Top Priority (recommend ~3 items) | Comments |
| Medium Priority |  |
| Low Priority |  |
| No priority (not relevant)  |  |
| Write down other factors or restrictions that may be important for scheme design:*For example, should the scheme target just “luxury” items – i.e., sweet beverages? or will it be a solution to manage all recyclable items?**Are there other factors that may be important for communities, existing recyclers/transfer facilities, or importers?*  |
| **Notes for Follow-up / Further Research / Discussions:** |