CLAIMS

1. A system (1) for collecting waste objects (2) for recycling, said waste objects being deposit-return objects, comprising:

   a container return system (100), having an inlet (102), recognition means (103), and an outlet for a waste object; and

   a carrier arrangement (300; 350) adapted to receive the waste object (2) from the container return system (100) at a first location having a first elevation, and adapted to transport and deliver the waste object to a second location for storage or further transport, the second location having a second elevation which is vertically seen higher than the first elevation,

   wherein

   the system (1) further comprises a buffer arrangement adapted to receive the waste object (2) from the container return system (100), and to deliver the waste object (2) to the carrier arrangement (300; 350) at the first location, and

   the carrier arrangement comprises at least one carrier adapted to move repeatedly between the first location and the second location.

2. A system according to claim 1, wherein the carrier arrangement is a closed loop path carrier arrangement configured in such a way that the at least one carrier is adapted to move repeatedly between the first location and the second location along a closed loop path, a displacement of the at least one carrier from the first location to the second location occurring on a different portion of the path than a displacement of the at least one carrier from the second location to the first location,
   wherein said displacement of the at least one carrier between the first location and the second location is substantially vertical, and

wherein the at least one carrier is a paddle having a generally flat surface adapted to push said waste object in a tubular structure of the carrier arrangement.

3. A system (1) according to claim 1 or 2, wherein the container return system (100) is adapted to receive waste objects (2) of different materials and/or different sizes, and the waste objects (2) of different materials and/or different sizes are mixed together.

4. A system (1) according to claim 2 or 3, wherein said system is configured for only accepting a certain range of objects, and the flat surface of said paddle is at least 30 % shorter than the maximum length of the waste object that the system for collecting waste objects is configured to accept.

5. A system according to any one of the preceding claims, wherein the buffer arrangement is adapted to receive the waste object (2) from the container return system (100) at a third location and
wherein the buffer arrangement comprises sliding means adapted to transport the waste object from said third location to the first location.

6. A system according to any one of the preceding claims, wherein a vertical distance between the first location and the second location is within the range of 50 cm to 400 cm.

7. A system (1) according to any one of the preceding claims, wherein the buffer arrangement (200) is adapted to receive the waste object (2) from the container return system (100) irrespective of a location of the at least one carrier (301).

8. A system (1) according to any one of the preceding claims, further comprising at least one liquid nozzle (3) adapted to deliver a cleaning liquid (4), such as water, into at least one component of the system (1) chosen from the group of the buffer arrangement (200) and the carrier arrangement (300) for cleaning of the system (1) and/or of the waste object (2) and wherein at least one of the buffer arrangement (200) and

the carrier arrangement (300) is adapted to collect, carry and deliver liquids (4) concurrently with the waste object (2).

9. A system (1) according to any one of claims 2 to 8, wherein the carrier arrangement is a closed loop path carrier arrangement and comprises a plurality of carriers adapted to move repeatedly between the first location and the second location along said closed loop path.

10. A system (1) according to any one of the preceding claims, wherein the at least one carrier is adapted to transport and deliver at least 2, at least 5, at least 10, or at least 20 waste objects concurrently during a displacement between the first location and the second location.

11. A system (1) according to any one of the preceding claims, wherein the container return system is a reverse vending machine (100), RVM.

12. A system (1) according to claim 11, wherein:

    a horizontal distance between said inlet of the RVM and the second location is within the range of 50cm to 200cm, or 80cm to 170 cm or 100cm to 150 cm and/or

    a vertical distance between said inlet of the RVM and the second location is within the range of 50 cm to 300 cm, or 50cm to 200cm, or 75cm to 150cm and/or

    a vertical distance between the first location and the second location is within the range of 50cm to 300cm, or 100cm to 300cm, or 100cm to 250cm and/or

    a vertical distance between the first location and the third location is within the range of 20 cm to 150 cm, or 20cm to 120cm, or 30cm to 100cm.

13. A process of transporting and collecting waste objects (2) by a system (1) for collecting waste objects for recycling, said waste objects being deposit-return objects, the system comprising a container return system (100), a buffer arrangement (200) and a carrier arrangement (300, 350), which carrier arrangement comprises at least one carrier adapted to move

repeatedly between a first location having a first elevation and a second location having a second elevation which is vertically seen higher than the first elevation and higher than said outlet of the container return system,

wherein the process comprises the steps of:

- receiving, by the buffer arrangement, a waste object from the container return system(Step S3);
- buffering (Step S6) the waste object by the buffer arrangement until the carrier arrangement is positioned to receive the waste object,
- delivering the waste object from the buffer arrangement to the carrier arrangement at the first location (Step S9); and
- transporting and delivering the waste object by the carrier arrangement to the second location (Steps S10, S11).

14. A process according to claim 13, wherein the step of transporting and delivering the devaluated waste object by the carrier arrangement to the second location comprises transporting the devaluated waste object by the at least one carrier in a substantially vertical displacement between the first location and the second location.

15. A system (1) for collecting waste objects (2) for recycling, said waste objects being deposit-return objects, comprising:

a carrier arrangement (300; 350) located to receive a devaluated waste object (2) from an RVM (100) at a first location having a first elevation, and adapted to transport and deliver the devaluated waste object to a second location for storage or further transport, the second location having a second elevation which is vertically seen higher than the first elevation,

wherein

the system (1) further comprises a buffer arrangement located to receive the devaluated waste object (2) directly from an outlet of the RVM (100)

at a third location having a third elevation different from the first and second elevations, and to deliver the devaluated waste object (2) to the carrier arrangement (300) at the first location,

the carrier arrangement comprises at least one carrier adapted to move repeatedly between the first location and the second location,

the second elevation is higher than said outlet of the RVM.