# Exemplary Patent Workaround Strategies

*EP2874727B1 (ANTECY BV)*

# Example: EP2874727B1 (ANTECY BV)
## Claim 1

*1. A device for conducting an adsorption/desorption temperature swing process having a desorption step conducted at least in part at a desorption temperature below 100 °C, said device comprising (i) a reservoir containing liquid water; (ii) a reactor containing an adsorbent; (iii) a vacuum source and (iv) one or more heat exchangers adapted to recover heat from gases leaving the reactor and wherein heat recovered from gases leaving the reactor is transferred to water in the reservoir; the reservoir, the reactor and the vacuum source being in fluid connection with each other during the desorption step so that the vacuum source causes water in the reservoir to evaporate, and water vapor to flow through the reactor for purging the adsorbent.*

# Claim 1 Workaround Strategy (1)

| Claim 1 feature | Rationale |
| --- | --- |
| …a reservoir containing **liquid water**… | ▪ The claim explicitly requires "liquid water“<br>▪ Substituting another liquid eliminates this requirement and avoids literal infringement |
| **Possible Workaround** | |
| Replace liquid water with a **different low-boiling-point liquid** such as ethanol or methanol | |

# Claim 1 Workaround Strategy (2)

| Claim 1 feature | Rationale |
| --- | --- |
| …a **reactor containing an adsorbent**… | ▪ Claim 1 only covers a "reactor containing an adsorbent“<br>▪ Using an alternative separation mechanism avoids the scope of the claim. |
| **Possible Workaround** | |
| Replace the adsorbent reactor with a **membrane separation or absorption column** | |

# Claim 1 Workaround Strategy (3)

| Claim 1 feature | Rationale |
| --- | --- |
| …**a vacuum source**… | ▪ The claim specifically recites a "vacuum source“<br>▪ An alternative mechanism for moving gas is a technically different means and lies outside the claim language |
| **Possible Workaround** | |
| Use a **blower, compressor, or gravity-fed flow** instead of a vacuum source | |

# Claim 1 Workaround Strategy (4)

| Claim 1 feature | Rationale |
| --- | --- |
| …one or more **heat exchangers** adapted to recover heat from gases leaving the reactor… | ▪ The claim requires heat recovery from gases<br>▪ A distinct heat source that does not depend on reactor gas flow is technically outside the literal claim scope. |
| **Possible Workaround** | |
| Use **electrical, infrared, or resistive heating** instead of heat recovery from exhaust gases | |

# Claim 1 Workaround Strategy (5)

| Claim 1 feature | Rationale |
| --- | --- |
| …**heat recovered** from gases leaving the reactor is **transferred to water in the reservoir**… | ▪ The claim specifies heat transfer to water in the reservoir<br>▪ Using a buffer system or different fluid circumvents this specific requirement. |
| **Possible Workaround** | |
| Transfer heat to a **different intermediate fluid or use storage** for later use | |

# Claim 1 Workaround Strategy (6)

| Claim 1 feature | Rationale |
| --- | --- |
| …the reservoir, the reactor and the vacuum source being in **fluid connection during desorption**… | ▪ The claim requires fluid connection during the desorption step<br>▪ Disabling this simultaneous connection breaks this essential requirement |
| **Possible Workaround** | |
| Use **temporally sequenced or isolated operation** with valves or phase-change barriers | |

# Claim 1 Workaround Strategy (7)

| Claim 1 feature | Rationale |
| --- | --- |
| …the vacuum source causes **water in the reservoir to evaporate**, and water vapor flows through reactor… | ▪ The function described in the claim (vacuum-induced evaporation and vapor purging) is bypassed by externally supplying vapor, thus avoiding this combined structural-functional setup. |
| **Possible Workaround** | |
| Introduce **externally generated steam** or vapor instead of causing in-situ evaporation of water | |